

MAY, 1880.

THE AMERICAN FARMER

ESTABLISHED
1819

PUBLISHED
— BY —
J. M. SANDS & SONS
BALTIMORE, MD.

Office, No. 128 W. Baltimore St., Baltimore,
nearly opposite American and Sun Buildings. }

{ Subscription, \$1.50 a year.
To Clubs of five, 1.00 a year.

"High Grade" Ammoniated Super-Phosphate.

Just the thing for Tobacco Planters who follow with Wheat.

CORN FERTILIZER.


A first-class article for corn, at a low price.

10 to 13 per cent. available Phosphoric Acid.

2½ to 3 per cent. Potash.

POTATO MIXTURE

This will produce a fine yield of superior Potatoes.

 We have also in stock and to arrive a full line of AGRICULTURAL CHEMICALS.

WM. DAVISON & CO.

104 W. LOMBARD STREET, BALTIMORE.




GEORGE PAGE & CO.



No. 5, N. SCHROEDER STREET, BALTIMORE, MD.

Manufacturers of PATENT PORTABLE STEAM ENGINES,

The Boilers the Safest and Most Economical of Fuel Made.

Stationary Steam Engines and Boilers, Patent Portable Circular Saw Mills, Bash, Muley and Gang Saw Mills, Flour Mill Machinery, Grist Mills, Shafting, Pulleys, &c. &c.  AGRICULTURAL ENGINES A SPECIALTY. Lath, Shingle and Barrel Machinery, Luffel Turbine Water Wheels, Wood Working Machinery, all kinds; Tanite Emery Wheels and Grinders, Circular Saws, Saw Gummers and Tools and Mill Supplies Generally. Agents for **NICOLS, SHEPARD & CO.'S VIBRATOR THRESHING MACHINES.**  COMPLETE THRESHING OUTFITS FURNISHED.  Send for Descriptive Catalogue and Reduced Price-List.

THE AMERICAN FARMER.

"O FORTUNATOS NIMIUM SUA SI BONA NORINT
"AGRICOLAS." Virg.

PUBLISHED BY SAM'L SANDS & SON, BALTIMORE, MD.

VOL. IX.—No. 5.]

MAY, 1880.

[NEW SERIES.]

What we May Learn from Certain Weeds.

Messrs. Editors American Farmer:

Among the many questions presented to a farmer in his endeavor to obtain from the soil the greatest profit, most prominent is the following: Is there any expenditure that I can make upon the soil which will, with increase, be returned in the value of the crop?

Independently of the answers to this problem, which are to be found in considering the drainage, tillage or special crops, others no less important may be drawn from a consideration of the chemical constituents of the soil in connection with those of the plant.

The ash constituents of almost all cultivated plants are well known; but the chemical constituents of the soil, or, more strictly speaking, of the portion of the soil available to the plant as food, varying, as it does, with every variety of land, presents a problem far more difficult to solve.

Insufficiency of Analysis of Soils.

Not many years ago it was thought that a chemical analysis of the soil would afford the answer. But among the many difficulties met, the following force us to turn to some other direction for it:

First. There may exist in the soil potash, &c., combined in minerals, which neither the liquids of the soil nor of the plant can decompose, and yet may be broken up and dissolved by the acids employed in analysis.

Second. The total weight of soil from which the plant may derive its food is so great, and the amount needed by the plant so small a fraction of it, that comparatively very large amounts of soil would need to be treated (involving much expense) before a weighable amount of any special constituent could be obtained, so that one could state positively that this constituent was present at all, or that it was, or was not, in sufficient quantity for the needs of the plant.

Third. From a larger amount of soil it is impossible to wash out and collect for analysis more than a portion of the substances which it may contain, soluble in the liquids of the soil,

and available to the plant, owing to the peculiar (jelly-like) retentive action which soils always exhibit.

Another road for solving this problem lies in the analysis of the rocks from which the soil has been formed, expecting in these to find in larger amounts those constituents which would be largely removed by the rain-water in the process of disintegration. The writer hopes at some future day to aid in making such analyses. But of course it is only where the connection between the soil and such unchanged rocks can be traced, and where such soil extends for some distance, that this solution can prove one of practical value.

Composition of Soils as Indicated by Spontaneous Growths.

Not proposing at this time to consider the knowledge of the soil which is to be derived from noting the previous habitual prosperity of certain crops, or from direct experiments with single fertilizers, such as ashes, bone-ash, &c., I would draw attention to what we may learn from the weeds which so infest our country.

We may note that all of the plants which grow so thrivingly wherever they get a start find their food close at hand, and are not retarded in their growth, while their roots must ramify in the soil in order to obtain this needed food. All plants demand for their mineral constituents certain amounts of potash, lime, magnesia, phosphoric acid, sulphuric acid, iron, and probably soda and silica, but for each plant the relative amounts of these are different, and also at different stages of growth these amounts vary, though to a far less extent.

Now if we find any plant multiplying in ground in which it is undisturbed, we may certainly infer that its ash constituents are fully supplied and are in the soil in amounts at least sufficient for other plants making equal demands.

As with other plants, weeds only can thrive where all their conditions of growth are fully met, and hence we conclude:

1st. If a soil has a short supply of any one ash constituent and an abundance of the others, surely we should expect to find, of the weeds which can grow in that soil, those which make demand of little of that one ash constituent, and the inverse of this is at least highly probable.

Undoubtedly, in some if not all of these plants, Silica is essential; but to obtain a better view of the amounts of the remaining more important constituents, the above results have been recalculated, excluding the Silica, together with the Alumina and Iron and Manganese Oxides,—as no doubt the main portion of these latter has been derived from adherent dust, giving

TABLE III—In 100 parts pure Ash (excluding Alumina, Iron and Manganese Oxides and Silica.)

	Broom Sedge.	Wire Grass.	Blue Thistle	Potato Weed.	Purslane.	Sumach.	Sassafras.	Rag-weed.	Mullein.	Dock.
Chlorine.....	7.48	11.77	4.76	4.47	4.43	.85	.26	3.51	3.47	10.03
Sulphuric Oxide.....	4.50	15.75	4.38	12.34	3.32	8.43	11.89	8.31	7.78	8.73
Phosphoric Oxide.....	7.79	7.75	5.46	23.08	5.40	9.18	13.07	8.30	6.54	7.48
Potash.....	54.02	44.96	32.72	23.82	63.27	46.90	36.37	32.59	53.30	55.60
Soda.....	2.13	7.93	2.77	1.24	3.66	2.19	6.66	.82	3.54	7.65
Lime.....	19.78	9.54	44.11	19.02	11.08	26.24	24.32	35.07	26.27	9.11
Magnesia.....	5.93	4.35	6.87	17.03	9.84	6.40	7.49	12.21	5.88	3.66
Deduct Oxygen replaced by Cl.....	-1.72	-2.65	-1.07	-1.01	-1.00	-1.19	-.06	-.82	-.78	-2.26
	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

To draw any inferences from these results, we should compare the analysis of each plant with that of plants in some measure similar to it,—noting only very decided differences. Because of the limited varieties of plants of which I can find previous analyses, in some instances the comparison is between plants not very similar.

In the following I note in tabular form only those constituents which appear in specially large or small amounts:

PLANTS.	COMPARED WITH.	TOTAL ASH AMOUNT.	IN LARGER AMOUNT.	IN SMALLER AMOUNT.
Broom Sedge..	(Young Grasses)...	Low.....	Potash, Sulphuric Oxide.....	Phosphoric Oxide.
Wire Grass....	(Young Grasses)...	Full.....	Chlorine, Sulphuric Oxide.....	Phosphoric Oxide, Lime.
Blue Thistle..	(Thistle, &c.).....	High.....	Silica.....	Phosphoric Oxide.
Potato-weed...	(Potato).....	Full.....	Phosphoric and Sulphuric Oxide..	Silica.
Purslane.....	(Bean).....	High.....	Potash.....	Phosphoric Oxide, Lime.
Sumach.....	(Leaves of Trees)...	Full.....	Potash, Sulphuric Oxide.....	Phosphoric Oxide.
Sassafras.....	(Leaves of Trees)...	Full.....	Soda, Sulphuric Oxide.....	Phosphoric Oxide.
Rag-weed.....	(Wheat in Flower)...	Full.....	Lime, Magnesia, Sulphuric Oxide.	Phos. Oxide, Potash, Soda.
Mullein.....	(Cabbage).....	Full.....	Potash.....	Phos. Oxide, Magnesia.
Dock.....	(Cabbage).....	Full.....	Potash Soda, Chlorine.....	Phos. Oxide, Lime, Mag.

The following conclusions may be drawn with at least a high degree of probability:

Where either Broom Sedge, Mullein or Sumac abounds, and is the principal growth, the soil is probably sufficiently supplied with potash, not needing other ash constituents than phosphoric acid. Yet we must not overlook the fact that frequently a soil may have Broom or Sassafras as its only growth, and yet have this in so small an amount that but little potash may be present.

Where Blue Thistle will grow in abundance, the soil is no doubt capable of improvement, as it contains a considerable amount of soluble silica, but being a biennial it may grow where both potash and phosphoric acid are in rather small amount.

Where Potato-weed grows in abundance, the soil is no doubt well supplied with all, and especially so with phosphoric acid.

Where Purslane grows in abundance, the soil may need phosphoric acid, but almost certainly it does not need potash. This plant contains much nitrogen (amount not determined.)

Where Rag-weed grows rapidly and in abundance on a wheat stubble, it may evidence a considerable supply of available potash and phosphoric acid, although these are present in rather small proportion in its ash.

Since Dock sends deep into the soil a tap root, which continues to grow from year to year, the larger amount of potash in the ash of its leaves does not necessarily indicate a full supply of that constituent. This plant also contains much nitrogen (amount not determined.)

In making any comparisons between the requirements of these plants and of others we must bear in mind the variations in the length of the time during which they grow, and in the extent to which the roots of different plants penetrate the soil. The roots of some annuals, as wheat and oats, extend to a depth of even 4 or 5 feet, while the roots of others do not reach half that depth.

I would in conclusion again mention the important bearing of the supply of nitrogen in influencing the growth of a plant, and for the reason before stated we must, from other considerations, judge of the amount of nitrogen needed on a given soil for any special crop.

University of Va.

F. P. DUNNINGTON.

[It gives us great pleasure to present this paper from Prof. Dunnington, who is the Adjunct Professor of Analytical Chemistry at the University. It is of much practical value, and the analyses of these plants have, with one exception, not before been made.—Eds. A. F.]

Chemical Fertilizers and Their Use.

Messrs. Editors American Farmer :

When "the earth brings forth grass" it does it because all conditions are fulfilled—all material is at hand to build up that plant. No plant can exist nor grow without a precise quality and quantity of nourishment. This means of subsistence plants find partially in the soil, partially in the atmosphere. Plants of a lower order and wild plants spring up as soon as the surface of the soil has collected a small quantity of nourishment; but our noble plants—viz: grains and roots—demand a richer meal, a more opulent situation. This fact is not in the least strange, for these plants have to grow closely side by side in millions of specimens, and occupy generally, a few years later, the same soil again. It is impossible that under such circumstances soil and air can give all food to sustain these plants and for all the time, and so it has been a necessity since the memory of man to add to the soil a quantity of nutritious matter, especially manure, the excrements of domestic animals. On a virgin soil, on the banks of overflowing rivers in your old deep forests, where perhaps for hundreds of years a luxuriant vegetation has grown up without suffering a reaping of any produced substance, there is a great mass of nutritious matter heaped up, so as to produce at once after plowing and sowing a good harvest of grains and roots, and may be for a series of years. And still, after all, by reaping every year, without returning part of this substance, the soil will become poorer and unproductive. When some speak of better harvests forty or fifty years ago it is a symptom that the stored-up nutriment for plants is used up—at least those soluble parts—and commercial fertilizers are wanted.

It is a known fact that stable manure is the foundation of agriculture; and, as the editor in the February edition truly remarks, commercial fertilizers ought to be used as supplements to, not as substitutes for, barn-yard manure. In our country it has been often tried to farm without any stable manure, to keep neither cattle nor sheep, to sell all kinds of fodder and straw, and enrich the soil merely by commercial fertilizers. All the substances plants needed were given to a full degree; yet after a few years the experiment proved to be a failure—crops decreased. Stable dung fertilizes the soil not only by its chemical substances, but by its physical action, when fermenting within the soil. Commercial fertilizers may be given even in a better composition, yet they never will make up the physical power of stable manure.

In spite of this we ought to be satisfied that our learned men have listened to the laws of nature and have taught that, besides nitrogen, carbonic acid, water, potash and phosphates are the principal and indispensable minerals to build up plants, and that wherever stable dung is not sufficient or not complete, commercial fertilizers will compensate the deficiency; and these commercial manures will not only supply the needed nutritious matter, but are a means in connexion with stable manure to increase the produce to an astonishing height. It is ex-

pected that the more we are compelled to enforce a higher culture the more commercial fertilizers are desired.

By using commercial fertilizers it is necessary to cultivate the soil more carefully than by using stable manure, to put the soil in the right physical condition; secondly, do not apply commercial fertilizers in too small a quantity, for wet or drought lessens very often the effect; finally, commercial fertilizers ought to be when used in a dry, finely-divided and soluble state, and ought to correspond with the analysis stated by the seller.

The principal fertilizers consist of matters containing potash, phosphates and nitrogen.

By using potash, the highest concentrated sulphate of potash ought to be applied; for the lower grades contain too much of the chlorides, an enemy to all vegetation. Only on sandy soils or moor-land lower grades are used with advantage; probably the chlorides, in these last-named soils, is easily washed into the subsoil and gets out of the reach of the roots. Potash within the soil is very quickly absorbed, and it is therefore the rule to plow it under deeply, so that not merely the extreme surface, but deeper strata within reach of the roots are benefitted. It is also a rule to plow under potash long before sowing or planting. Clover, oats, barley, rape, tobacco, the vine, appear to gain most by use of potash; wheat, rye, less; and as far as our experience goes it is for beets or potatoes not very successful,—for, although it raises the produce, beets generally become poorer in sugar, and potatoes poorer in starch. This, however, may be the case only on our soil and in our climate.

Phosphoric acid we receive in guano, bones and phosphoric minerals. All these phosphates are seldom used in their natural state, but are transformed into super-phosphates, soluble in water. Phosphoric acid forwards especially the formation of grains, (less of straw or leaves,) increases the sugar in beets and the starch in potatoes, and hastens the maturity of plants. We plow it in deeply, and but shortly before sowing. Newer experiments have proven that when super-phosphates are plowed under long before sowing part of them unite with other materials within the soil (with lime or iron) and become insoluble again for awhile. The best medium for the effect of super-phosphate is a mild loamy or little moist soil. For sandy or calcareous soil it is of no benefit: in the first-named soil it hastens, on account of want of moisture, maturity too fastly, before the plant is fully grown and developed; on the secondly-named land, super-phosphates combine at once with lime and become insoluble again. For lighter soils, wanting phosphoric acid, we prefer ground bone. They operate slower but surer in sandy soils. A general rule is to use super-phosphates not alone, but in connection with nitrogen, one to one, or two parts super-phosphates to one of nitrogenous matter.

Nitrogen we find either in guano or ammoniacal products, or in Chili saltpetre. The most quick and intensive effort on plants is shown by Chili saltpetre. Strewing it over a field of green corn, a week later the green corn enjoys a dark-

green color, and bears abundant, long, broad leaves; yet this kind of manure seems to promote more the vegetable body, instead of the formation of grains. This manure is almost the reverse of phosphates; while phosphates hasten maturity, this retards the maturity of plants, and that is the reason by using Chili saltpetre that sugar-beets become poor in sugar and potatoes become poorer in starch. The roots don't reach full maturity. Its best effect is shown on a warm, dry piece of land, even on sandy soils; on cold stiff soils or moor-earths, it has little effect. It is generally harrowed into the soil before sowing, sometimes only strewed over young plants. It is a fault to strew it over the growing plants in a later period or at intervals, for the more its maturity retarded and the more straw is produced instead of grain.

In all cases phosphoric and nitrogenous matter complement one another, and ought to be used contemporaneously. Yours truly,

E. WENIG.

Schönlanke, Prussia, March 16, 1880.

SHEEP AND DOGS.—The cry still continues to come up from all quarters of the country of the destruction of valuable sheep by dogs. The late legislature was earnestly called upon to adopt some measure by which this terrible nuisance would be abated; but nothing was done in the matter. The Centreville (Md.) *Record* of 22d says that "on Thursday night last dogs attacked the flock of sheep of Mr. Blanchard Emory, Sr., near town, and killed some seven or eight lambs. The dogs made good their escape."

In Harford Co., a few weeks ago, Henry Amos lost several sheep by dogs, Jacob Enfield twenty-five and W. W. Fantom several. Fortunately, a number of the dogs engaged in the killing were shot.

Chemical Manures.

Messrs. Editors American Farmer:

It seems to me that the controversy in your pages as to whether ammonia is plant-food or stimulant has very little to do with the matter. We all know that fertilizers strong in ammonia cause a large leaf-growth. Now it seems to me that if we can get this heavy growth on the land, say in the shape of clover, it matters very little whether it was food or stimulant that did it, as any good farmer with a heavy growth of clover can get his land started on a course of improvement. Mr. Meeks stated that years ago good crops of wheat were grown in Kent without the use of fertilizers, and no doubt there were, but many years before Mr. Meeks' day. I am intimately acquainted with Kent Co., and know that previous to the introduction of Peruvian guano there were in all parts of the county large tracts of land lying out in commons, and producing nothing but sedge and pine bushes. Now it is rare to see a bunch of sedge in Kent. What has caused this change? Peruvian guano enabled the land to grow clover; and when once in a condition to grow clover, lime could be used to advantage, and the land rapidly improved.

If a farmer follows no rational system of improvement on his land, it is no wonder that he has to apply increased quantities of concentrated fertilizers annually. A man takes a poor piece of land and applies an ammoniacal fertilizer, which supplies what the soil needs to enable it to produce a good crop. The next year he sows the land without the ammonia and gets just such a crop as he would have gotten if the crop of the previous year had not have been manured. Therefore he calls the ammonia a stimulant which has exhausted the soil. He then tries ammonia again on this same land; but the crop is not so good, simply because the first application supplied a chemical want, and enabled him to exhaust some other elements in his soil which he has failed to restore. If, in addition to the fertilizer with a high percentage of ammonia, he had at the same time applied the slowly decomposing bone to the soil, his ammoniacal manure would have afterward had as good effect as the first application. The true use of concentrated fertilizers, in my opinion, is to get a large growth of clover for plowing under in order to get more furrows in the soil. The great trouble with Kent Co. farming is not the effects of over-stimulation with fertilizers, but the constant wearing of the soil in cropping with grain. Any agricultural community which ships constantly all the raw products of the soil will grow poorer unless the waste is fully supplied from the laboratory, and the increased necessity for artificial fertilizers in Kent and other counties on the Eastern Shore arises from the fact that everything grown on the land is shipped away to market. No agricultural section ever became permanently wealthy in growing grain exclusively. If Kent county farmers will devote a larger area to grass, and feed more of the products of their land to stock, the demand for the manures of the laboratory will rapidly decrease. Most farmers on the Eastern Shore have a horror of grazing, and under their system they well may; but if they ever want to be independent of the chemical manure factory, they must graze and must feed more largely the products of their soil.

EASTERN SHORE.

Fertilizers Again.

Messrs. Editors American Farmer:

I should not trespass upon your space and tax your patience again upon the subject of commercial fertilizers, were it not a matter of such grave importance to the agricultural interests of the nation. Our farmers are paying annually millions of dollars for these chemical compounds, and it is natural that they should ask if there is any corresponding benefit accruing to them.

[Here follows a philological digression, which we take the liberty of omitting.—Eds.]

The sole object of the farmer in manuring his land is to feed it. He may, and too often does, starve it, and, in retaliation, it will starve him. But land half-starved will be improved by rest. Rest will show its recuperative power on an overtasked field as on an overtasked man. In such cases nature supplies the needed aliment in decaying herbage. It may be aided by

art; say by turning under a green crop, if enough vitality be left to produce one, or by turning on to it a flock of sheep.

Animals require water; so does the land; and when the clouds fail to supply this necessity of all life, man has recourse to irrigation; and now science suggests a dynamite balloon for the same purpose. Land, like man and all animals, must have heat and light, and the sun is as essential to the one as to the other. Land, in common with animals, must be supplied with air; hence the intelligent farmer plows deep and thoroughly pulverizes the soil, to allow the air to penetrate the land.

For what purpose are all these supplied to the land if not to sustain its life? This is why they are given to man, and without them neither he or the animals about him could exist.

When food and drink, labor and rest, air and light and heat are bestowed on objects, I infer life, and that the land requires all these just as all living organisms do. I claim that the analogy is strong, the resemblance striking, the similarity complete, the likeness positive and perfect. The land is a living thing, needing, as all living things do, food, drink, rest, air, light and heat; and that without these it cannot do its appropriate and Heaven-appointed work, to supply food to plants, animals and mankind. Now this earth-life may be abused and greatly injured by the neglect or ignorance of man. It has been done by dosing it with powerful stimulants. If the isolated cases adduced by Mr. Hutton to show that stimulation has resulted in increased fertility of the soil and enriched the owner, is intended to prove that such is the general or universal result, he fails, because he argues from particular cases to general ones, and Lord Bacon can "set him right." The fact is that farmers are not generally chemists; they are not able to analyze either the compounds offered nor the soils they till, both of which need to be done before he can judiciously or safely apply any chemical fertilizer. How otherwise can he know with any *certainty* the effect of any "brand" on his land?

But the land doctor comes with his Panacea; and no matter what the land may need, or what may be the disease, his mixture is a sure remedy.

In medical circles this is called quackery; in agriculture it is denominated science!

But these "plant-food" merchants are ready to guarantee wonderful results from their specifics, and yet are unwilling to wait for their money until these results appear, or to bear the loss if the nostrum fails.

But look at the testimonials! Mr. A had a heavy crop from "Excelsior"; Mr. B an astonishing yield from the same; Mr. C an amazing increase from the same. "Excelsior" should get higher, and does in price,—but will anybody pretend to say that there was no difference in the nature of the lands of A, B and C?

The truth is there was no accurate measurement of land or crops; and A, B and C judged only from appearances.

Another truth is that if the fertilizer produced such results, the testimonials were not necessary; it would speak for itself. Another truth is that

the complaint is heard all over the land, and from every side, that "farming don't pay,"—a cry unheard of before the era of commercial fertilizers. If increased fertility has resulted from their use, why continue to spend millions—indeed all that can be made—to purchase more? I answer that the land being stimulated or intoxicated, it must be kept up, just as is the case with the human system.

This astonishing fertility has not yet reached this side of the bay; when it does we will dispense with commercial fertilizers and save our money. Yours, HOWARD MEEKS.

Kent Co., Md., March, 1880.

Our French Letter.

A New Agricultural Society in France.

Messrs. Editors American Farmer:

France has founded a new "national society" of agriculture, the third of its kind, and destined to really "meet a want," that of holding cattle shows in rotation in the chief cities of the country once a year; a congress will sit during each show. As a work of private initiation, it alone merits to succeed, for it is the government organizes these shows—ten per "region" per year, with a fat cattle exhibition in February in Paris, and a monster show on the occasion of a World's Fair. The two agricultural societies existing are respectively the representatives of wealthy landed proprietors, and of tenants and small farmers, owners of their holdings. One society is in favor of protection; the other, while eschewing politics, leans not the less to free trade: the new-comer steps in to represent the agricultural community and feelings between. Strictly speaking the elder societies are merely farmers' clubs, having periodical discussions on agronomical matters, and aiding the minister of agriculture like consulting bodies; occasionally they assist the local farming societies by advice rather than endowments, and have chemical laboratories at their disposal, and journals to make known their proceedings.

Protection and Free Trade.

For two months French farmers are feverishly engrossed with the question of relieving their profession of several of the weighty charges which press upon it. While certain manufacturers aim to impose elevated duties on English imported goods, so several French agriculturists desire to handicap American grain and beef. It is supposed that a duty of 6 or 10 per cent. on wheat and cotton would accomplish all that is requisite. The Marquis de Montlaur, an eminent cattle-breeder, has stated that a bullock from the United States, and we receive very few of them, can be sold in France at a profit of fr. 350. An import duty of 10 per cent., then, will not keep American cattle out of the market.—Respecting grain, were it not for the shipments made by the States, France would at this moment be paying famine prices for bread. The proposed impost will not exclude the grain of the far West from the market. What the French farmers need is a more equitable distribution of the general taxation of the country; not the creation of new lines of railway so

much as the breaking down of the monopoly of high rates in the case of those existing.

Principles in Stock-Feeding.

Professor Leyder draws attention to some of the principles that ought to be kept in view in the dietary of stock, notably that of the horse. The animal system consists of two-thirds liquids and one-third solids; the latter are divided into organic, which dissipates in the form of smoke when burned, and inorganic, the part that remains in the form of ashes. The organic substances are nitrogen, fat, and sugar; however, very little sugar is found in the living body, although it enters largely into the food. Nitrogen and its compounds represent the principal group of organic substances in the living body; they form the scaffolding of the organs and the principal element of the blood, as well as the matter of the muscles and flesh. The muscles, bear in mind, are the active agents of work and strength; they constitute also the basis of the bones, the nerves, skin, internal membranes, cartilage, hair and horn. Fatty matter enters but slightly into the construction of the animal machine; its duty consists rather in sustaining and repairing the edifice; the sugar acts simply as a combustible. The inorganic substances vary following the organs; phosphoric acid and lime predominate in the bones, potash in the blood, common salt and iron in the blood. All these matters react on each other, burn in every nook and cranny of the system, producing the temperature known as "blood heat;" the lungs act as a chimney, enabling the internal fire to "draw," and carbonic acid and heat to exhale. The mineral matters pass through the kidneys as in a strainer, and are found in the bladder in the form of urine, and obtainable when the latter is evaporated. Food is ground by the teeth, then it passes into the digestive tube, where it is brewed and acted upon by various dissolvents—the saliva which flows from the mouth, the secretions that exude from the coats of the stomach and intestine, the bile supplied by the liver, and the pancreatic juice. In a space of 24 hours a horse secretes of its weight 10 per cent. of saliva, and an ox 14. On an average animals secrete 10 per cent. of their weight of gastric juice; a horse produces 13 lbs. of bile per day. Now these juices do not attack the aliments as simple solvents, as water would salt and sugar; they contain agents of fermentation that profoundly modify the nutritive principles of the food, as leaven does that of beer—making the paste porous and digestible. These liquid ferments are nitrogenous and essential to digestion in the absence of these juices; no matter how rich may be the food, it passes through the system unappropriated, as in the case of persons weak from abstinence, privation or disease, because the living body has exhausted all its supply of nitrogenous matters capable of producing the requisite supply of juice ferments. Hence, in the case of stock kept alive on famine rations during winter, the nitrogenous matters of the organs are used up; the animal wastes away, and when it is placed on a plentiful and succulent diet in spring, it is incapable of assimilating the nitrogenous substances, which thus pass into the manure. In

all food the proportions of nitrogen to other principles should be as one to six; the non-nitrogenous matters serve the purposes of combustion, and impart that necessary volume to the organs to produce satiety—another condition of digestion. The nitrogenous substances also burn, but they are too costly to employ and would excite the organs too much; hence, why hay or other fodder is given with oats to moderate the energy-producing nature of the grain. To give concentrated food in excess would act like overcharging a furnace with inflammable materials, and would result in congestion, apoplexy, or other kind of inflammation.

Effects of the Hard Winter.

The effects of the severe winter are commencing to be fully known. Winter-sown crops where not protected by snow will have to be resown in whole or in part; grain sown in November has simply rotted; all spring sowings have been effected under magnificent conditions, but some commence to fear the spring may continue too long dry. For root crops the soil in point of tilth is admirable; vines have suffered, especially in the valley of the Rhine; and wherever the plant has been weakened by disease, it has succumbed. Fruit trees have largely paid their debt to the severities of the winter. In southern Europe the fruit trees in blossom are reported to be extremely vigorous. The cold did not penetrate on an average more than seven inches in the soil, so its effects on the phylloxera will not be important—that insect, like others, boring deeper as he feels the coming cold. There is no positive diminution in the circle of the insects' ravages, but rather the contrary, and opinion is growing more decided in the grafting of American stocks. Bees having failed to secure sufficient food for the winter, many proprietors of hives have had to destroy the one-half to secure the other moiety. Sheep that had largely suffered from the rot, consequent on the wet season, have fared ill from the want of sufficient food during the winter. Beet-sugar mills cannot boast of having done a brisk business; the frost destroyed roots and floods compelled closing of the works. Opinion here and in Europe counts upon a good harvest this year, and so close the era of bad seasons.

Prices in France.

In France the mean price per 100 lbs. of wheat is fr.32, rye 23, oats 21, barley 22; maize per cwt. fr 8 to 10; buckwheat 11 to 12; bran 8 to 9; malt 13 to 38; rape cake 9; linseed 15; cotton 6; arachide 7. Butter varies from fr.1½ to 4½ per pound; ordinary cheese from fr.5 to 25 per cwt.; Peruvian guano fr.16 to 18 per cwt.; super-phosphate of guano fr.10. Horses sell from fr.200 to 1,460 each; for the butcher 14 to 135; asses from fr.32 to 100; goats 22 to 60. Live-weight price at cattle market, per pound—oxen 15 sous; calves 20, sheep 16, pigs 16. First quality, wholesale price of beef, one franc per pound. F. C.

Paris, March 25, 1880.

THE CENSUS.—Farmers should not neglect to prepare statements for the enumerators, whose work will begin June 1. See particulars in our Dec. No. Don't sign any papers in blank, and look out for bogus census-takers.

Farming in Queen Anne's County.

Messrs. Editors American Farmer :

In your April No. appears another article from the fertile pen of "Centreville," in which he tells you again that he proposes to stick to the text of "farming in Queen Anne's." He also informs you that he "fully expected the oddity" of his first article to provoke a reply from me, and attributes to me characteristics I am unconscious of possessing. In heralding the virtues of his Short-horns, and denying merit to almost all other breeds, I did not so understand him as meaning to confine himself to the limits of Queen Anne's alone. When I wandered off into other counties of the Eastern Shore, and referred to the herds of Messrs. Lloyd, Hardcastle, Tilghman and others, "worthy names and pleasant gentlemen," as he tells you, "though not farmers of Queen Anne's, however beautiful their herds may be," it was to show the "oddity"—nothing more—of "Centreville's" assertion that the breed of Herefords had "nearly ceased to exist." He now tells you that his "oddity" was "an occasional white-face scrub, the produce of a common woods cow, by one of the doctor's breechy bulls, that may have strayed away from home and left his mark." This is such anomalous basis for a pedigree, that it seems to me it would much puzzle the most astute member of the Herald's college to work it out. I think my neighbors will bear me out in the assertion that they are never troubled by any *breechiness* on the part of my bulls. He may possibly have derived his impressions in this respect from the fact that some years ago I sold an aged bull to a gentleman whose farm immediately adjoined the town of Centreville. He was the first of his breed that had appeared in that vicinity. His white face was a "novelty," perhaps an "oddity." The citizens of the town were in the habit of turning out their cows to graze during the day upon the lawns and meadows adjoining the fields of his owner. These horned Eves went out this "oddity to behold"—nothing more.—Bovine Adam resisted temptation until frequently repeated. At length he trespassed! Fences no longer held him in restraint. He might frequently be found wandering beyond what had formerly been his paradise. At early hours of the morning his sonorous voice might be heard resounding through the streets of Centreville,—sounding defiance to any supposed rival, or in plaintive cries for his lost companions. This is one of the few instances that have come to my knowledge of a propensity to trespass, and this, I think, can be clearly traced to the female curiosity of these quadrupedal Eves. Bad as his conduct was, it seems almost as excusable as that of a Short-horn in the vicinity of "Centreville," of whom I recently read an account. This animal, according to the statement of the local newspapers, attacked the manager of the farm in the open field, and required the discharge of several loads of shot into his body and a strong assault by pitchforks to drive him from his prostrate victim. Perhaps this is "the noble Short-horn that will

stay at home and reign supreme, and guard the gates of Chester-on-the-Wye."

"Centreville" and I quite agree that all stock should have plenty of good grass, shade and water in summer, and in winter warm quarters. He also speaks of "meal, bran and hay," and says "these are more than most of our Short-horns get; yet they thrive, they do grow, and oxen have been sold from the adjoining farm to mine, grass and stalk-fed, then working in the field in the yoke, that weighed in Pennsylvania 4,500 lbs., after having been driven nearly 100 miles. Mr. Scott was their purchaser, to feed for beef." He does not inform us whether it was a yoke of oxen or a *single ox*, but at all events it must have occurred before the emancipation proclamation, which he elsewhere told us had "liberated the ox from his burden and placed it upon the mule."

If he meant a *yoke of oxen*, the weight may not be astonishing for a pair, yet I must admit they were very creditable feeders to have acquired that amount of avoirdupois, "grass-fed and stalk-fed" alone; but if he refers to a *single ox* having attained that weight upon such feed, then I must say it is very convenient to have a neighbor and Mr. Scott, upon whom to rest the responsibility of the statement. "Centreville" accuses me of wandering from the text, yet I do not see that he has anywhere met my assertion that 20 years and more ago Short-horns were much more numerous and popular than they are at the present day. In confirmation of this, I might refer to the large herds of Capron, Carroll, Hill, and others of the Western Shore, that were annually seen at the fairs of those days; to the herds of the Emorys, Hughletts, Pacas, Lloyds, and others of the Eastern Shore. Why all these herds have, with but one or two exceptions, run out and disappeared, is perhaps an unnecessary inquiry here to pursue, but may be left to those having a direct interest in the investigation.

He seems not only fully satisfied with the wisdom exhibited in the management of his own affairs, but points you out the blunders I have made in the direction of mine, which could not possibly have occurred to him at the usually tender age of ten, but at the "riper age of 20" was beyond the chance of occurrence. Probably we shall each pursue our own views, independently of the opinion we may entertain of each other's judgment in matters of this character. At one point in his communication he tells you "the doctor had reason to feel ashamed of his inbred, badly-fed Short-horns," though further on he says on my farm "may be found lands rich in grasses as those of Kentucky, and plains as fertile as the farther West." No wonder, then, they should bring the blush of shame to my cheek, whilst upon "the adjoining farm" to his own they attained upon "grass and stalks alone" such favorable results as those related upon the authority of his neighbor and Mr. Scott!

He also informed you that "the venerable doctor has made important improvements in the mode of breeding Herefords,—that he ('Centreville') has seen some Herefords that" were red with spotted faces! A "Baltimore county breed-

er's show the pure white face." Had he consulted an Encyclopedia of Agriculture, article Hereford, he might have found them there described as "red, &c., with white or *flecked faces*." If he will turn to Webster's Unabridged, he will there see the definition of *flecked*—spotted—and these he might have seen in some members of the Baltimore county breeder's herd. I do not think it worth while to follow him throughout all his wanderings, or to burden your columns with the names of the individuals to whom I may have sold stock; but if I so desired, I might readily enumerate a much longer list than the ten or dozen which "Centreville" seemed to think confirm the wisdom of his selection. Nor does it appear necessary to refer to all the sources from whence I obtained my stock, when I mention having had the services of such bulls as "Independence," "Champion," "Washington," "Sailor," "The Professor" and now "Richard the Third," all of whom can be found in the herd book.

"Centreville" quite frequently refers to "Chester-on-the-Wye." Pardon me for endeavoring, even in this small matter, to set both you and him straight in this orthography. You printed it "Chester," which was probably due to my bad chirography. It should, however, be *Cheston*. Chester-on-the-Wye was the name originally given to this tract by the early settlers, with the view, perhaps, of perpetuating the memory of old homesteads and early associations. Probably as a matter of convenience the affix was dropped, and it has been commonly known as *Cheston*. To adjoining tracts they gave such quaint names as "Coursey-upon-Wye," "Breck-Knock," "Ringrone," "Val Rose," &c.

Begging pardon for having occupied so much space in your columns, I will subscribe myself, as was the custom of our forefathers,

Your humble servant,

WM HENRY DECOURCY.

Cheston, April 15th, 1880.

Fultz Wheat.

Messrs. Editors American Farmer:

This variety of wheat was introduced into this country some five years ago, and has become very popular with farmers on account of its prolific yield; but it, like the Clawson, contains very little gluten. It is largely grown in the Cumberland Valley, Pennsylvania, and has been ruinous to the flour trade of the millers. The flour lacks strength, and will therefore make but a small yield of bread, and is universally condemned by good bakers, not only on that account, but because it will not make a large-sized loaf in proportion to its weight. No miller making a high grade of flour dares to buy it at any price. A choice grade of flour cannot be made of either Fultz or Clawson wheat; this is the universal testimony of all who have tested them. I am sorry the white wheat, which was profitably raised for many years, has run out with us, but hope some new variety may be introduced that will supply the demands of millers as well as remunerate the farmers.

The Millers' Associations of four States have passed resolutions discriminating against both

Fultz and Clawson from three to five cents per bushel. But millers who compete with us pay the same for all varieties, and for us to discriminate would cause dissatisfaction. I do not expect to induce the farmers to raise a kind of wheat best suited to our wants when some other kind is most profitable, but to encourage them to raise various kinds, that we may determine what variety will give the best results. While the most of our flour is sold in the Washington market, from which we have very little complaint, there is a demand which we supply in the neighborhoods of Sandy Spring and Brookeville, from which a stream of complaint is constantly pouring in, in reply, "to send us better flour than the last." We say it cannot be made of Fultz wheat, even with better machinery than used to make the flour which gave satisfaction six years ago, when we had the white wheat. Respectfully yours,

W. E. MANAKEE.

Montgomery Co., Md., March 25, 1880.

Pulverized Oyster-Shells.

The following correspondence, concerning the use of what is often in this part of the country a waste product, will be read with interest:

BROAD CREEK, November 20th, 1879.

Professor N. B. Webster:

Dear Sir—It has occurred to me that from our peculiar surroundings another industry could be added which possibly might result advantageously to our agricultural interests, and at the same time benefit in a small way the oyster interest.

At no distant period oyster-shells will be an incumbrance at the packing establishments in our community.

In my opinion a shell-crusher attached to steam power (which is not far distant from many of the oyster establishments) to reduce oyster-shells to a powder would supply, at a very low rate, a slow but lasting fertilizer.

Before presenting my views to the public on the practical value of this material, I take the liberty of asking your opinion, as a chemist, of its relative value as compared with shells subjected to a degree of heat that converts them into lime.

Yours truly,

G. F. B. LEIGHTON.

NORFOLK, VA., November 22, 1879.

G. F. B. Leighton, Esq.:

Dear Sir—I very cheerfully reply to your inquiries of 18th inst. Your plan for crushing shells for agricultural purposes is an excellent one. For purposes of composting with muck or vegetable substances the quicklime obtained by burning would be best, but it is not always safe to apply quicklime to crops as a fertilizer. That objection does not apply to pulverized shells, which act like the finest and richest marl. Besides, in all recent shells there is more or less of animal matter, very valuable as a fertilizer, which would be lost by burning.

It is true that the burnt caustic lime soon "air-slacks," or becomes a carbonate, and hence

mild in its effects on crops; but, at best, all the trouble and expense of burning is then lost. The powdered unburnt lime would be a very lasting fertilizer, and while the old proverb may not be true that he

"Who marls clay throws all away,"

it will certainly prove true that

"Who marls sand may buy land."

The advantages of a free use of pulverized shells on the light, sandy or "sour" soils of Eastern Virginia would be incalculable. Besides, experience in marling in malarial districts has shown its valuable utility as a sanitary measure. Would that EDMUND RUFFIN'S "Essay on Calcareous Manures" could be put into the hands and heads of every farmer in Virginia, and the means of realizing the benefits of liming land be within reach of all in the shape of shells pulverized, lime, animal matter, phosphates, and all the ingredients of the recent shell!

For present and future utility on land, I would prefer the pulverized to the burnt shells.

FAULKNER, in his "British Husbandry," speaks highly of caustic lime slacked with brine or concentrated sea-water. I am sure there is an inexhaustible mine of wealth throughout tide-water lands, in the shells and waters at hand.

At any rate, persevere with your "crushing" ideas. Very respectfully yours, &c.,

N. B. WEBSTER.

Sorghum for Feed.

Col. H. P. Underhill, the well-known Southern agent of the Bickford and Hoffman drill, kindly furnishes us the following letter, which will be read with interest:

MR. H. P. UNDERHILL:

Dear Sir—Mr. A. Bromfield tells me you want to know something of my experience of sorghum as feed. I have been raising it on a small scale for several years, and feeding to mules in the fall up to say November. Last year I raised 5 acres; commenced feeding to mules in September: fed from that time up to the present I would say about fifty head of stock on an average; sometimes more, and then less. I made an estimate of it as it stood just before cutting, and there was 54 tons to the acre. It is difficult to cure it, and, if left in the shock, it sours and is not so valuable as when fresh and sweet; still the stock eat it very well. I drilled it with your wheat drill set for drilling wheat $1\frac{1}{2}$ bushels to the acre; can put it any distance you like apart,—I mean the rows,—mine was 32 inches; think 40 would be best; and if the land is not strong, set drill 1 bushel to the acre would be better.

Respectfully yours,

W. L. CALDWELL.

Boyle Co., Ky., April 19, 1880.

P. S.—I regard one acre of sorghum worth as much as three of corn that realizes 60 bushels to the acre; this is not an extravagant estimate.

W. L. C.

The Wool Product.

The attention of farmers and breeders of live stock in this country seems to be again aroused to the increase of our flocks of sheep. This is occasioned not only by the increased demand for meats for home as well as foreign consumption, but also to supply the demand which exists for the several qualities of wool for our manufacturing establishments. We have in previous volumes of the *Farmer* alluded to the awakening of attention to this subject at the South, and the interest manifested by Mr. Stephens of Georgia, and the senators of several States in that section, to further the production of such varieties of wool as would be suitable to their part of the country, in the effort now being made to build up factories for the production of woolen goods, being satisfied that the great success which has attended their efforts in the manufacture of cotton goods will be equally potent to increase their prosperity by adding thereto that of wool. It is said some of the senators alluded to have flocks of sheep numbering among the thousands, and the advantages of this branch of farming has been made so manifest that there is every reason to hope a permanency of success will be established in that quarter, where heretofore much opposition had been felt to manufactures.

Mr. Hayes, whose name has heretofore been before our readers as an able writer upon the subject in hand, and who, as secretary of the National Association of Wool Manufacturers, was requested a few years ago by the southern senators to prepare a paper upon the subject of wool-growing in the South, has written a letter in reply to one from Mr. W. H. Enix, of Marshal Co., West Virginia, announcing the formation of a wool-growers' association in that county, and requesting advice as to the kind of wool to be aimed for as most in demand by the manufacturer; to which Mr. Hayes replied as follows,—a copy of the letter having been sent to the editor of the *National Live-Stock Journal*, from which we copy:

"Dear Sir—It gives me great pleasure to reply to your polite letter, and to express my satisfaction that the subject of wool-growing is receiving the attention from the farmers of West Virginia that it deserves.

Your first question is, "What breed of sheep would you recommend as producing the wool most in demand by the manufacturer?"

The first general remark I have to make in answer to this question is, that the demands of our manufacturers are so various that you can grow no kind of wool which will not be in demand,—whether clothing, combing, or carpet

wools. The farmer must therefore grow the wool for which he can get the best price and produce at the least cost, and therefore the wool-grower himself can only determine what breed of sheep it is most advantageous for him to use.

With contiguity to city markets, for the sale of mutton and lambs, and with high-priced land, the English races (the Cotswold and the Leicester) are preferred, or these races crossed with the Merino, which produces a kind of wool now in great demand for worsted goods.

For the purely pastoral regions, the Merino is undoubtedly to be preferred; and if abundant wool of a medium character (the kind which will always be most in demand) is sought for, the flocks should be improved or kept up by the American, or the Vermont, Atwood, and Hammond race. For instruction on this point you should have the Vermont Merino Sheep Register, to be obtained of Albert Chapman, Secretary, Middlebury, Vermont.

Although this kind of wool will always be in demand, you must take into consideration the fact of the immense and growing production of this wool in Texas and the far West. Montana, it is said, will produce 50,000,000 lbs. in 1890. Therefore the competition in these wools will keep down the price.

But there is one kind of Merino wool in which there is no competition, and for which your region is especially adapted, and for which you already have the animals to breed from—I mean the *superfine*, or electoral wools. I beg to refer you to my remarks on growing this kind of wool in the pamphlet which I send you: "Resources of the United States for Sheep Husbandry, etc.," p. 21. I believe if the farmers of your county should make a specialty of growing this kind of wool—that is, grow it so generally, and in such abundance, that buyers or manufacturers would be attracted to you, as they used to be to the Pan Handle—you would find this wool more profitable than any other. A limited quantity of this wool will always be in demand. If it were more abundant it would be in still greater demand, for our manufacturers would revive the production of fine broadcloths, for which this wool is essential. This kind of wool, as shown by past experience, is adapted to your climate and soil. You have near at hand the animals to start your flocks. You will have no competition from Texas or the far West, and the more you produce the better will be your prices, because you will establish a reputation for your district which will attract buyers."

Mr. Hayes, in his letter to the editor accompanying the one to Mr. Enix, goes at length into the discussion of the tariff bearing upon the different qualities of wool, which it is not necessary here to repeat, but we will add that portion of it which has reference to the "Pan Handle" of Virginia and Pennsylvania, so celebrated in former times for the production of Merino wool. He says:

"You are aware that the most celebrated region for superfine sheep in former times was Washington county, Pa., the Pan Handle in West Virginia, and the adjoining counties in

Ohio. Although it is deeply to be regretted that the heavier-wooled Merinos have so largely taken the place of the finer races, and the region has lost the *characteristic* sheep husbandry which Dr. Grothe says it is so desirable for the wool-grower to maintain, it is an interesting fact that the pure Electoral blood remains in some of the flocks in that region, that the originally tender Saxon has become acclimated and hardy, and that their culture is found to be profitable by the few conservative farmers who have been so fortunate as to resist the fashion for heavier-wooled sheep. I have published before some of the facts which follow, but it may not be amiss for me to repeat them, as I have referred to them in my letter to the West Virginia farmers, above quoted. The facts were communicated to me, at my request for information on this point, by Mr. J. D. Witham, now the intelligent editor of the "Wool-Growers' Bulletin," published at Steubenville, Ohio.

Mr. Witham says that the farmers of West Liberty County, West Virginia, formerly bred from as pure Saxony sheep as could be obtained, one claiming to have bred the finest-wooled ram ever known, whose progeny is still to be found in two or three flocks. He refers to Mr. Miriam Beall, near West Liberty, as having about 500 sheep, whose wool he "warrants all to be XXX and picklock," and "may be considered the cream of the once famous Saxony flocks of West Virginia." This flock has had a recent infusion of Silesian blood, from Mr. Chamberlain's flock; but the wool, to judge from the samples at the Centennial, which I well remember, preserves its ancient reputation. Mr. Witham mentions Mr. James Ridgeley, of the same district; Mr. John Baird, of Philadelphia, and Dr. J. C. Campbell, of Rockland district, who claim to have never introduced Spanish Merino blood into their flocks, and whose products are known as Saxony clips.

Mr. Witham refers particularly to Mr. William Croskey, of Hopedale, Harrison County, Ohio; and it may not be amiss for me to repeat at some length what he says of this gentleman's flock, since the circumstance of his clip having been sold at a higher price than any other in the country has been so extensively noticed in the newspapers of the day. Mr. Witham writes:

"Mr. Croskey considers his sheep the hardest that are bred in Ohio, Pennsylvania, and the West Virginia region. The wool pays as well as any other raised in that region. His fleeces average $3\frac{1}{2}$ lbs. He sold last year for 65 cts. a pound, straight through, without any deductions or dockings. I said to him, 'What breed of sheep do you have, Mr. Croskey? Is it Saxony?'"

"I do not know. I have aimed to breed the best and finest sheep that I can get. * * * I have some of the best of Thos. A. Wood's flock, acknowledged to have been the finest of that section, but sold and scattered after his death. I had one of his rams, which died last year at the age of twenty-two years, and which took the premium or medal as the finest sheep at one of the World's Fairs. I have now twenty better sheep than he in every respect."

"Do you not think your breed of sheep, or the Saxony sheep, tender?"

"I suppose my sheep are Saxony, if anything. They are not American Merino, Spanish, nor any other brand of which I have heard. This ram, dying at the age of twenty-two, would seem to indicate hardness. I do not house my sheep; some of them have access to sheds, but they are just as apt to select the highest knoll of a cold night as any other place. I think there is no harder sheep—no sheep better adapted to this climate,—and we have as hard a climate as anywhere, the thermometer getting down as low as 25° below zero, and up to 100° in the shade nearly every year. I have not so much trouble in dropping time as some of my neighbors who raise Spanish or American Merinos."

Pleuro-Pneumonia in Maryland.

Gen. Le Duc, United States Commissioner of Agriculture, sent to the House Committee on Agriculture, the report of Dr. Charles P. Lyman on the subject of "contagious pleuro-pneumonia or lung plague of cattle; where and to what extent the disease exists in this country." Dr. Lyman's report consists of a diary of his travels in the infected districts during the months of February and March, together with a good deal of detailed information, collected by inquiry and by personal examination, respecting the circumstances attending each outbreak of the disease in the localities which he visited. He submits no reflections of a general character, and makes no recommendations; and his report is chiefly valuable as showing the probable extent of the district within which the disease is at present confined. Dr. Lyman visited Maryland about the middle of March, and the following is his report in relation to the prevalence of the disease in this State:

"Although it has long been known in a general way that contagious pleuro-pneumonia existed among the cattle of this State, no effort on the part of the authorities has ever been made to ascertain with any exactness the localities of the diseased herds. On the 8th of March I proceeded to Baltimore, where I at once called upon Mr. Wm. B. Sands, editor of the *American Farmer*, a gentleman who had greatly interested himself in this matter, and who gave me all the information in his possession as to the localities and extent of the plague in the State, as well as kindly furnishing me with letters of introduction to the officers of the different agricultural societies throughout the State. On the 9th of March I visited Hagerstown, the county-seat of Washington county, where on the next morning I called upon P. A. Witmer, Esq., Secretary of the County Agricultural Society. He said he did not believe there was any disease in the county; that on the day before there had been a meeting of the Board of Agriculture, at which there had been a good representation from all the different sections. Those present agreed that they had never known or heard of a case of lung plague in any part of the county.

I was next introduced to Mr. J. B. Bausman, a cattle-dealer in this place. In the pursuit of his business he had been all over the county repeatedly, but had never known of a case of the disease. The drift of cattle in this place was entirely from West Virginia, through to Baltimore—never, so far as he knew, from Baltimore here. In his trade he feels very much the evils of the English embargo. It makes a difference to him of at least \$10 per head in the price of his cattle. I then saw Dr. H. J. Cossens, an English veterinary surgeon, who has been located here for the past fifteen years, and whose practice extends over the entire county. He had a considerable experience with the lung plague in England, but had never seen but one case in this country; that was many years ago, in Virginia. He is sure there is none in this country, nor has there ever been. Several other gentlemen from different localities were seen, but always with the same result. One farmer had a cow, which he had recently bought, that was coughing and not doing well. I visited her and found her suffering from tuberculosis. In the afternoon I proceeded to Frederick City, the county-seat of Frederick county. Here, upon the 11th of March, I called upon Mr. J. W. Baughman, secretary of the local agricultural society. He did not know of any diseased animals, but took me out to the court-house, where we saw and questioned a number of gentlemen from different parts of the county.—None of them knew of any cases of this disease; they were very sure that had there been any unusual sickness they would have known of it.

I next saw Dr. P. R. Courtenay, an English veterinary surgeon. He had been here but a comparatively short time and had heard of nothing that caused him to think that there was any of this disease in the country. He kindly offered to bear the matter in mind, and if any cases of the disease came to his knowledge he would let me know at once. Here, as in Washington county, the whole drift of cattle is from west to east. In the afternoon I went to Westminster, the county-seat of Carroll county, and called upon Colonel W. A. McKellip, president of the county agricultural society. He was sure there was no disease of the kind in the county, but he said it was quite a common thing at certain seasons of the year for cattle to be brought here from Baltimore. This I regarded as a very suspicious circumstance, and so I asked for an introduction to some cattle dealers in town. This was kindly granted, and I proceeded to call upon Mr. Edward Lynch. He said: "Farmers hereabout generally make milk for the Baltimore market, and procure their cows from among themselves; but from the time that grass comes up until late in the fall of the year some of them are in the habit of feeding cattle; that the cattle for this purpose are generally bought at the 'Scales' in Baltimore; that in this way last fall Mr. Samuel Cover, of Silver Run, this county, procured some stock, which, after having been on his place for a short time, developed disease of some sort; some died and some that were sick got well. Also a Mr. Beacham, of Westminster, had had trouble of a similar nature for some time past. In a general

way, he knew that the farmers hereabout were somewhat frightened about contagious pleuropneumonia. On March 12 I drove to the farm of Mr. Samuel Cover, above referred to, at Silver Run, and found there three cases of chronic contagious pleuro-pneumonia. This gentleman stated that he had got the disease last fall through some steers that came from southwestern Virginia, but which had stopped at the Baltimore stock-yards for some little time, at which place he had bought them. Some four or five weeks after he got them the disease broke out among them. He had at the time some eighty head of neat stock. Of these fifteen were sick. When the disease first showed itself he put all the sick animals in a building by themselves, and had all the stables thoroughly disinfected. This was kept up all the time, and the places repeatedly whitewashed. In all, four animals died—two of them the Baltimore steers; the other two were cows which he had had for some time. Mr. Cover further says that now, when he gets cattle, he always puts them by themselves in a building entirely away from his regular cow-stables, and hopes in this way to avoid any further outbreaks among his herds.

IN AND ABOUT BALTIMORE.

Returning to Baltimore on March 7 in company with Dr. Daniel Le May, a veterinary surgeon, I visited a herd of milch cows kept in a dairy in Woodbury, near Baltimore. Here we found one acute and two chronic cases of the plague. The man in charge said that he had got through with the disease, from which he had suffered greatly some two months ago, by selling out all his sick animals. From here we went to another large dairy in the same neighborhood. The gentlemanly owner here informed us that he had had none of the disease for some time; that his plan was to buy often and sell often. In this way he found he could keep up his milking stock and keep rid of disease. From here we visited a near neighbor living on the direct road to the city. In answer to questions this man said that he did not know if his neighbor (the one from whom we had just come) called it having the disease or not, but that he drove many a sick one past his house on his way to the Baltimore market. He (our present informer) was free to say that he followed the same practice himself, and had done so ever since he had lost his first eight animals. He supposed this was not right, but his neighbors did it, and so he did. Summer was invariably the worst time thereabout. The next place visited was about two miles distant, and on a different road. The dairyman here had suffered greatly in the past, but thought that now, by selling the sick ones, he had nearly rid himself of the plague.

March 18.—We drove in several directions around city, and found the disease or its effects in all the herds, except one, that we visited.

March 19.—To-day we examined a number of the cow stables in the city itself, in which many chronic and a few acute cases were found.

March 22.—I went to Harford county, where the disease was reported as existing in a number of different directions. However, we concluded to visit the farm of Senator George H. Williams,

whose herd of fine Alderneys have been suffering more or less from the scourge for the past two years. Here among several chronic cases was one that, although he had been sick for some time, was making no progress towards a good recovery. This animal the overseer consented to let us kill. The autopsy showed, well marked, the lesions of the disease. The infection here, as with all the other outbreaks hereabouts, came from Baltimore. At this point further investigations were given up for the present, and it still remains, in order to properly finish this report, to make an examination of the remainder of this state, the District of Columbia and Virginia, in all of which places it is believed that contagious pleuro-pneumonia of cattle exists to a greater or less extent.

WHAT THE INVESTIGATION SHOWS.

As a result of my investigations thus far I find this ruinous foreign plague actually existing among cattle in the following States:

Connecticut.—In Fairfax county.

New York.—In New York, Westchester, Putnam, Kings and Queens county.

New Jersey.—In Atlantic, Gloucester, Camden, Burlington, Ocean, Mercer, Monmouth, Middlesex, Hunterdon, Morris, Essex, Union, Bergen and Hudson counties.

Pennsylvania.—In Philadelphia, Chester, Montgomery, Bucks, Lehigh, Cumberland, York, Delaware, Lancaster and Adams counties.

Maryland.—In Carroll, Baltimore, Harford and Cecil counties. The middle and southwestern portions of this State have not yet been visited.

No examination has as yet been made in the District of Columbia or of the infected territory of Virginia; but, as the plague prevailed quite extensively in both of these localities last season, it will no doubt be found still in existence when the investigation takes place.

Grade Jerseys—A Town Converted.

Under this title F. D. Curtis, a well-known writer for the agricultural press, gives the following experience to a New York cotemporary:

It took eight years to do it. The first Jerseys were laughed at and considered more than worthless. "The idea of making beef out of such cows!" "The poor, scrawny, spindle-legged things won't weigh anything." "What can they be good for?" "My old Line-back is twice as big," says one. Says another: "There's my old Brindle; she will give more milk than any one of them, and dress double." "Give me the Short-horns. There's Esquire Myers, he has a Short-horn bull which will weigh more than 2,500 pounds. That's the kind of cattle for me." "When you kill one of them you have got something." "Did you ever see Jones' cow? Her last calf weighed 'most a hundred pounds when it was born." "That is a model cow."

Such were the remarks and the reasonings when the Jerseys first came into town. Cows are kept here to make butter, and this was the kind of philosophy their owners indulged in, sitting on the nail-kegs in the store, or where neighbor chanced to meet neighbor, and neighborhood affairs were gone over. All men are

not fools; all men are not full of prejudice; all men are not bigoted. Some men think for themselves; some men reason. So, some men said: "We will try this new Jersey blood, and if there is any good in it we shall have the benefit." "We can afford to pay a dollar for a calf, if it is any improvement, and the owner of the full-blooded bull ought to have pay for his outlay and trouble." "Tis true we can get the use of native bulls for nothing; but if these Jersey cattle are what they are said to be, 'a butter breed,' that is what we want." "We keep cows to make butter, not for beef; let the West do that." "It is true old Rose is a good cow and hard to beat, and so are old Brindle and Line-back, but they never had a heifer calf as good as they are." "It is haphazard business trying to get good cows from our best natives; all the rest of our cows are only middling." The farmer with good judgment and forecast said: "I will try a couple of my best cows, anyway, and see what I can get. I don't believe much in new-fangled notions, but then other folks know a thing or two as well as I do, and all of this talk in the newspapers and these big prices for Jerseys must mean something more than mere fancy, for that would die out unless there was something behind of real value."

There were less than a half-dozen heifer calves raised the first year, half Jersey. When two years old they were cows. Old Rose, Brindle, and Line-back looked at these symmetrical and modest little intruders with wondering eyes and felt sure of their laurels. They filled the pail brimful, while the delicate-looking little missionary Jersey stopped at "half-full." The housewife had to admit that the "half-pailful" looked the richest. The milk was yellow. After a while she thought it fair to strain the Jersey milk by itself to see what it would do. The cream was "awful thick." The old favorites' milk was put alongside. It made quite a row of pans; but after standing twelve hours longer than the Jersey's, so that the cream would all get up, (it takes longer,) the Jersey's was much the thickest. In due time both sets of cream were churned, and the Jersey's came out ahead. "We will see," says the old-fashioned housewife, "what a week will do." There was a trial of a week, and the Jersey was ahead, and she has kept ahead, beating the native as a rule every time.

Seven and eight pounds of butter a week are a good yield for native cows, but a number of grade Jerseys make ten, and more. They are hardy, and some of them are as handsome as the pure-bred. Every farmer cannot afford to buy thoroughbreds, but every farmer can afford to breed his cows to thoroughbred bulls, and to raise the offsprings. Such cows now command ten and twenty dollars more in this town than the best natives, and are worth it for practical use. The beef notion in a dairy cow is getting out of the heads of our dairymen. More sensible and liberal ideas prevail. Croakers croak no more. If one begins, he is laughed at. Facts are thrown at him right and left. Ten pounds, eleven pounds, twelve pounds, twelve and a half pounds a week of solid golden butter, which sells for five to ten cents a pound more than

the best from natives. These facts shut him up. They come from the converts—the old doubters. They are full of zeal and want more Jerseys. They come from twelve miles away.

The butchers say the calves make the nicest veals. They are always fat and dress white. The beef is tender and juicy, and of the best quality. A good Jersey bull, of undoubted pedigree and promise, a year old, can be bought for \$75 to \$100, of breeders who are now veterans in improving this breed. A bull, carefully fed and handled, will answer for a whole neighborhood, and will add hundreds of dollars to the butter product in a few years.

Milking Cows.

Henry E. Alvord, a well-known dairy authority, writes as follows in *Land and Home*:

Milk is the most sensitive substance upon the farm; nothing compares with it in absorbent power. Yet nothing is so carelessly treated. First, ordinary pails are not at all suited for milking. They expose a large surface of milk to injury from bad odors, dust and straws, flaring open as if to catch hairs and dirt as much as milk. It is a hopeful sign that better utensils are coming into service. Several good patterns have lately been brought out. These new pails afford protection to the milk, guarding against many causes of taint and accidents. Nothing can ever take the place of careful, cleanly milking; but these pails assist in securing this end.

Washing the udder is better than rubbing, because it leaves the dead skin and animal dust in a moist condition, less likely to come off while milking. These little invisible particles act like so much yeast if in the milk, and are the source of much of the "animal odor" complained of. But when washed, the udder should be well wiped, and allowed to dry before beginning to milk. Don't begin milking while the teats are moist. The practice of wetting the teats with the first milk drawn is uncleanly, and generally injurious. The first milk is always watery, and often quite acid; it tends therefore to dry the teats unnaturally, and cause them to crack and become sore. Indeed, this first milk is so worthless, often so much changed in warm weather, that it is well to milk two or three teats-full on the ground; there is no loss of butter or cheese, and a positive gain in the keeping quality of the mess from which this part is rejected. To rub upon the teats the last few drops drawn is not so senseless, for this is rich in fat, and acts like an ointment; it is a handy preventive and remedy for chapped teats.

If there are several cows, begin milking at the left of the line as you approach it from behind, for the animals are much inclined to rest after being relieved of their milk, and moving from left to right enables them to lie down successively, without being afterwards interfered with. It is a good plan to begin by stroking the teats, and kneading the bag; half a minute thus spent is not wasted, for it is agreeable and quieting to the cow, and if the milking is then slowly begun she will "give down" all the more readily and

rapidly. There is no question of the power of the cow to withhold her milk; the udder is provided with a set of muscles and tendons for this express purpose, over which the animal has perfect control. Anything which tends to disturb, annoy or excite her causes this power of holding up to be exercised. There should be no interruption after the milking begins; hence it is best to begin each cow with an empty pail, and to have another which can be reached without leaving your place, in case of need. When well started, milk as fast as is consistent with proper care, and keep up this quick motion well to the end; else some of the rich "strippings" may be held back. The chief reasons for milking a cow perfectly dry are that the last milk obtained is always the richest, and is lost if not drawn, and that whatever milk is left in the udder beyond a certain time, not only loses its butter quality, but otherwise so changes as to injuriously affect the whole of the next milking; it is also liable to cause inflammation and to diminish the secretion of milk.

We all know how much cows dislike a change of milkers; but for this very reason I object to the advice so often given, that each cow be always milked by the same person. There will inevitably be an occasional interruption or change, and then trouble and loss often result, from holding back milk. Therefore, let every cow be accustomed from the first to be milked by at least two different persons. A cow may be thus broken to two new milkers about as easily as to one. Seven or eight cows in full flow are enough for one person to milk at a stretch, and they should be given three-quarters of an hour or more. With ten or more cows, there should be two or more milkers, and then it is a simple matter to shift to different sets of cows, daily. Then when one milker is absent, the fact is not noticed by the cows.

Without doubt, some cows need milking oftener than twice a day. A good many need it, at times, and any cow will give more milk and richer, if drawn three times a day, at least seven hours apart. But the extra draft upon the strength of the cow, the resulting necessity of better food, and the additional labor required, unite to make the matter a question of economy, which must be determined by the circumstances of each case.

Hoven, or Hove, in Cattle, (Acute Tympanitis.)

This disease is a common complaint amongst neat cattle at this time of the year. It is attended with symptoms of the most distressing nature; and as sudden death is frequently the consequence of this, the greatest caution therefore should be taken in turning cattle into a fresh pasture if the bite of grass be considerable, (as this has proved to be the chief cause;) nor should they be suffered to stop too long at a time in such pasture before they are removed to the barn-yard or inclosure, where there is but little to eat, in order that the organs of rumination and digestion may have time to discharge their functions.

If this be attended to for a few days it will take away that greediness of disposition and prevent the distressing complaint.

Nature.—Distension of the rumen or paunch by gas (or food.) As the proper functions and secretions of the stomach (and salivary glands) are indispensable agents in true digestion, in which gaseous disengagements do not rapidly take place, tympanitis can only occur when these are suspended from any cause.

Causes.—Sudden change of food; feeding on grass or young clover, upon which rain or dew has fallen; green crops containing much water, and roots that are partially decayed or frosted. It is common during obstruction of the gullet or choking, and disease or impaction of the third stomach, as well as affections of the second. Lastly, tympanitis occurs as a sign of other diseases, and is apt to appear as a chronic affection.



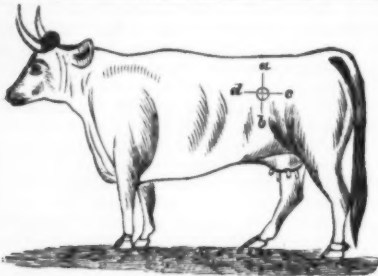
Symptoms.—A swelling appears in the left flank, and symptoms of distress are soon apparent, as indicated by great depression, labored breathing and panting. As the disorder advances, distention increases, and respiration becomes more labored; the animal moans and grunts, and, with an arched and stiffened back, declines to move. The eyes become bloodshot and prominent, saliva drips from the mouth, suffocation is imminent, blindness and insensibility come on, the creature staggers and eventually falls, the contents of the stomach being ejected through the nostrils.

The engraving given above shows the location of the bulging, caused by the distention of the rumen, or paunch.

Treatment.—The secret of success consists in arresting the process of fermentation and promoting the proper function of the organ. Carefully administer without delay the following, viz: Liquor ammonia, half-ounce; cold water, one quart; essence of ginger, half-ounce. By means of the above the gases are dispelled in eruction, (belching,) or through the intestines. One hour after the administration of the above, give chloride of lime four drachms, water one pint.

When the compounds of ammonia and lime are ineffectual in removing the distention, it is usual to pass the probang, or a long rubber tube, into the stomach, when a fetid gas will escape through the mouth.

Sometimes it happens that all means seem to fail; then, as a last resort in urgent cases, it is absolutely necessary to resort to a surgical operation, which is to make an opening in the flank by means of proper instruments, known as the trocar and canula, about 6 inches long.



The spot chosen for the operation is in the left flank, midway between the last rib and haunch bone, and about a hand's breadth below the spinal column. The engraving will afford necessary information in addition to the description. Secure the animal, place the instrument in position, and rapidly plunge it through the tissues.

The stiletto (trocar) is immediately withdrawn, and the tube (canula) left to allow the gas to escape. A string is then attached to the tube, in order that it may remain until the formation of gas has ceased. Through the tube medicine may be introduced into the stomach for the purpose of hastening the proper functions or

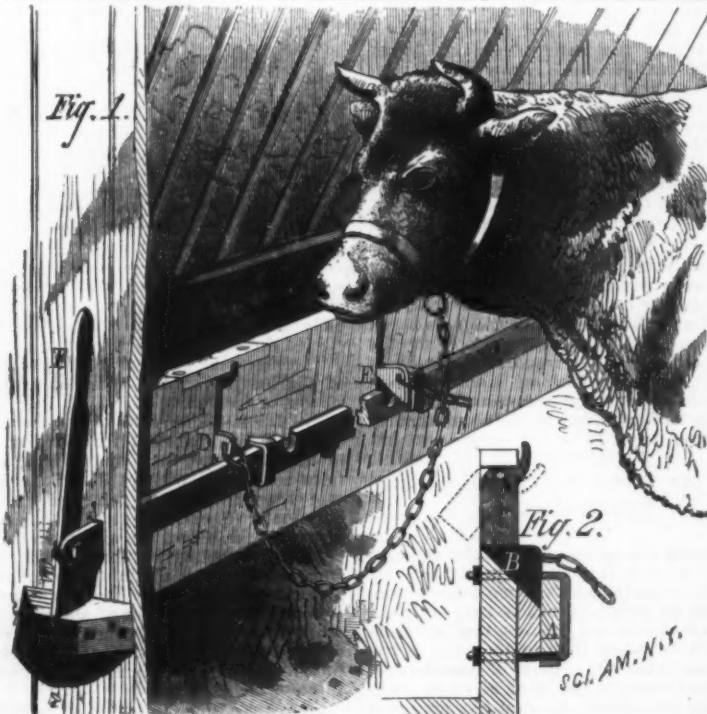
removal of the contents. In the event of there being no trocar at hand, a very narrow-bladed knife or long awl may be used, and, as quickly as withdrawn, a piece of elder, with the pith removed, inserted. The wound may afterwards be closed by a stitch or two. If possible, give rectal injections. After the acute signs are arrested give the following purgative: Epsom salts, one pound; table salt, one pound; molasses, one pint; warm water, two quarts. Mix and administer carefully. Brandy, whisky, rum, gin, &c, are of great service in restoring the tone of the organ after purgation.

D. LE MAY, V. S.

152 Saratoga Street, Baltimore.

Device for Fastening and Releasing Cattle and Horses in Stables.

We have received from the inventor, Judge Jas. D. Watters, of Belair, (Md.,) a sample of his contrivance for fastening horses or cattle in stables and unfastening them instantly in case of fire. The contrivance is a very simple one, and apparently very efficient, and may be seen at our office by any one interested in it. While



WATTER'S FASTENING AND RELEASING DEVICE.

intended for either horses or cattle, this invention would seem to have a special importance to farmers who stable their cattle, as it enables them to unfasten their stock for water without

going among them, and also affords the means to unfasten them all instantly in case of fire. This is a matter which farmers cannot fail to appreciate. The invention strikes us as a valua-

ble one, and we commend it to those interested, who may obtain any desired information by addressing the patentee, at Belair, Maryland.

The following description, taken from the *Scientific American*, will give some idea of the character of the contrivance, although the inventor has recently greatly modified it, and rendered it much more practical:

"The practical value of inventions of the class represented in the accompanying engraving can scarcely be overestimated. The frequency of fires and accidents which imperil cattle and horses imprisoned in stalls, has rendered something of this nature an absolute necessity, and its convenience in every-day use is worthy of consideration.

The front board of the troughs, or the head walls of a series of stalls, are all arranged in line, and a horizontal continuous bar, A, extends through all of the stalls, and is supported by staples or keepers, and provided with a stop pin which limits its motion. In the head wall, or in the front of the trough in each stall, there is a vertical recess having an inclined bottom running out into the stall. In the upper part of this recess is pivoted a gravity catch or detent, C, which extends downwards into the recess just far enough to leave a triangular chamber for receiving the triangular bit, B, which is attached to the end of a chain or rope about the animal's neck. This arrangement is clearly shown in Fig. 2. It will be noticed that the bar, A, extends along in front of the recess which contains the bit, B, and in conjunction with the gravity catch retains the bit.

In the bar, A, there are notches corresponding in position with the recesses in the troughs, and at one end of the bar there is a lever, F, by which it may be moved longitudinally.

There are two ways of releasing the animals. If only a portion are to be released, or if it is desired to release them separately, it may be done by throwing up the gravity catch as shown in dotted lines in Fig. 2. When it is desired to loosen all of the animals as quickly as possible, as in a case of fire, the bar, A, is moved longitudinally by means of the lever, F, bringing the notches in the bar opposite the bits, B, as shown at E (Fig. 1,) permitting all of the animals to escape simultaneously."

The Hog for the South.

At the annual convention of the Tennessee Stock Breeders' Association, held at Nashville, Tenn., Feb. 10, 1880, Mr. R. P. Leadbetter read an essay on the subject, "Which is the Best Hog for Tennessee and the South?"—of which the following is an extract: The editor of the *Bulletin of the American Berkshire Association* says: "He writes like an enthusiast, which is a good trait when not allowed to run wild. While we have long believed the Berkshire hog the best that is known for the most uses to which hog products are devoted, and the best suited to the greatest variety of climates and circumstances under which hogs can be raised, we are confident that breeders of Berkshires can gain nothing by assuming that there are no other good breeds known. Instead of the race of the

Poland-China hog being practically run, as the essayist suggests, we predict rather that it has just begun. The Berkshires, however, will not suffer from attempts to rival them by the Essex and Poland-China. Each of the breeds will improve by the competition,—the Berkshire, the while, keeping in the lead."

"Let us take a retrospective glance at the swine interest in Tennessee during the last thirty or forty years, that we may arrive at a somewhat correct conclusion in regard to the proper hog for Tennessee and the South. More than forty years ago, Berkshires were introduced in Tennessee, indirectly from England, and about the same period Byfields, Calcuttas and Woburns turned up in most of the counties of Middle Tennessee. The Byfields and Calcuttas were *unknown* very soon after being known. Woburn blood continued longer, and it even yet is to be found, in very diminutive proportion, in the herds of a few of our farmers. Next came the Chester-Whites. A few men ran wild, and challenged each and every breeder to meet the monster hog at the fairs. A few trials of the Berkshire and the Chester made short work of the latter—"a greasy spot" of the Chester not being left after the smoke had passed away; for, certainly, they were the coarsest hog that has been brought to Tennessee. Then the Cheshire, a white hog introduced from Kentucky, had a short and inglorious run. They, too, went, "unwept, unhonored, and unsung."

"But to cap the climax, the many-named Poland-China was introduced, accompanied by long lists of certificates to prove his many valuable qualities as a packing hog, while a dozen or more breeders were wrangling in bitter contention as to who should be 'sponsor,' or 'god-father,' to this mighty breed. But that contention has long since ceased. I suppose no one feels willing to 'shear the wolf for the fleece.' Short-lived, indeed, is the glory of the Poland-China, as I regard his race as practically run. I do not know of a Poland-China, of my own knowledge, for which the owner sets up any claim to purity of blood. In this connection, I would ask, where now is the Byfield of former years? Already gone. Where is the boasted Calcutta? Long since 'lost in the shade of buried years.' The 'Cheshire,' too, has taken his exit unceremoniously.

"But where is the Berkshire, which was antecedent in his introduction in the South to most of the breeds mentioned? I will not presume to attempt to answer this momentous question. Let the thousands of herds of either pure Berkshires or grades that now delight the eyes of their possessors in almost every State in the South answer; or the well-filled meat-tubs, teeming with the large, well-marbled, and well-rounded hams of the Berkshire hog, echo the approving, swelling sentiment of the South in favor of the Berkshire hog as a butcher's and packer's hog—after having for long years been weighed in the balance, and found that he is not wanting. The Essex, too, maintains a footing in many localities, and is an excellent hog for the South; not because he is a black hog alone, but because he is a paying hog, being neat in bone, having a well-balanced body, a great

feeder, and is of early maturity. He is very profitable to cross on the scrub or any of the coarse breeds.

"But the Berkshire is not only suited to the South on account of his black color, but because he is active, strong, and vigorous, with an immense body and fine limbs, of early maturity, remarkably adapted to gathering his food from the fields and woods; is a great feeder, having remarkable digestive organs and powers of assimilation, and can, like the Essex, be fattened at any age; and last, though not least, his adaptation to a Southern climate, being entirely exempt from mange or any other cutaneous disease."

WOLVES OR WARBLES IN CATTLE.—In answer to an inquirer at Point Clear, Ala., I would say that this trouble is caused by an insect, the *Cestrus bovis*, which in the warm summer months attacks the animal, pierces the skin, and deposits its egg in the orifice. After a time a swelling is observed, which grows larger from the development of the larva from the egg, and in time is discharged by the process of suppuration. Many of those small tumors with an orifice can be seen on one animal, and some may acquire the size of a walnut.

Treatment.—Simple pressure by the fingers succeeds in dislodging the larva; if resistant, open with a sharp knife, and dress with an astringent lotion,—as sugar of lead, one ounce; water, one pint. D. LEMAY, V. S.

The Gunpowder Farmers' Club.

Messrs. Editors American Farmer:

The club held its last meeting 17th ult., at the residence of John Boud, on Western Run.

[Trials of implements were made by several manufacturers of harrows, cultivators and drills, which bid fair by their operation to be decided improvements on the old machines.]

The club, after witnessing the trials, returned to the farm buildings, well satisfied with the neatness, system and order found prevailing everywhere on this beautiful, well-cultivated and fertile homestead, when the session was resumed, and the usual routine of preliminaries despatched.

Dickinson Gorsuch called attention to London purple as a substitute for Paris green. It is, according to the well-known entomologist, Prof. Riley, superior to Paris green as an insecticide. Cost in New York is six cents per lb. Should be used in the proportion of $\frac{1}{2}$ lb. of the purple to 18 lbs. of the customary diluents, such as plaster, flour, &c.

Mr. J. D. Matthews stated in reference to the inquiries put by the inspection committee at the last meeting on his farm, concerning the dates of the sowings of his wheat as bearing on the fly question, that the badly affected parts were sown between the 20th and 22d September, and that the balance (exempt from ravage) from 1st to 16th October.

Half Hour for Questions and Answers.

Dickinson Gorsuch had read a short article from pen of Levi Stockbridge, asking and

answering the pertinent question: "Does one crop remove more of the prime elements of fertility from the farm than another?" The answer is: that any such crops should be sold as contain the least quantities of potash, nitrogen and phosphoric acid. For example: sell timothy, retain clover; sell roots, retain grain; sell butter, retain milk; animals grown on the farm draw on it for bone required to build up their bony structure, and hence they deplete it; mature animals fattened and sold do not.

John Crother, Jr., related his experience and success in raising and selling young cattle, and asked how money could be made faster. Mr. C. had fed cheaply and secured good prices at two years old, but his luck was thought rare and exceptional.

The host thought it best to adapt ourselves to change of circumstances, and not pursue any one plan any longer than it pays. If feed is low, we should fatten cattle; but at present prices of produce it is not advisable to do so. This season he fattened cattle on pasture without injury to his land, and sold before winter. Last year, when hay and grain were low, he got highest market prices at home for feeding cattle; this season he does better by renewing last year's plan.

Jno. D. Matthews called that intelligent farming.

B. McL. Hardisty asked why it is farmers have persisted in feeding cattle this winter without profit? Both grain and hay are high—remunerative returns are impossible. When hay rose to \$16 and \$20 per ton in November, he sold.

Jno. C., Jr.—He had heard members of the club say it paid to feed hay at \$20 per ton. How had members done with their cattle this winter? Jos. Bosley stated that what he had fed had given him an increase of only \$14 per head. Grain he fed was small in quantity and inferior in quality, and less than half ton of hay each. In this connection, Mr. B. spoke of the rather striking productiveness of a 60-acre field of his, viz: Receipts from sale of steers and sheep pastured on it, \$400, not including butter from cows; besides, it had carried 10 head of horses and mules and 2 young animals. Sod is timothy and orchard grass.

An article from the agricultural columns of *New York Tribune*, by Lewis Sturtevant, on treatment of corn in selection of seed and culture, was read. According to this writer, the untried and almost undreamed-of capabilities of this cereal are amazing. The broadest field of improvement, as well as the most rapid, lies in the judicious selection of the seed, though much may be accomplished by culture. He advocates shallow plowing, as accurate and convincing tests have been made to prove that the corn rootlets are densest near the surface soil.

Jno. C., Jr., thought Dr. L.'s plan stopped right where it should go on. He would like to know what fertilizer is best for use on corn. Reply was made that bone and potash are used in Harford Co.; bone is applied at the rate of half ton per acre, with astonishing effect; is beneficial any season, wet or dry. Not so with

us. There seems to be some peculiarity in certain soils, which renders them susceptible to the action of bone.

The question was asked whether any member of the club had made reliable experiments, but none answered affirmatively.

Jno. C. Jr., said he had made a mistake in plowing 9 inches for corn. He had used the jointer, and consequently thrown the top soil into the bottom of the furrow; he saw his error when too late. The question is now what shall he put on to get corn? B. McL. Hardisty recommended a fertilizer composed of South Carolina rock and potash, manufactured in Baltimore. It has been used extensively by farmers on My Lady's Manor.

N. R. Miles named a party who had used the fertilizer referred to on corn successfully; also on wheat without success.

D. Gorsuch understands the writer to approve the use of barn-yard manure on corn. He has found it most useful on corn. Is disinclined to the application of commercial fertilizers on corn from the serious loss to be feared from washing rains. He expects to try superphosphate on corn in a small way this year, by using it broadcast after the first working.

A. C. Scott has applied commercial fertilizers to corn in the hill; resulted in increase of fodder, but not of grain.

B. McL. Hardisty.—Ammoniated phosphate is of no benefit to corn when applied in the hill. The South Carolina rock and potash he spoke of is put on broadcast. Pennsylvania farmers along the Maryland line, who are very loth to use fertilizers of any kind, especially when not well assured of remunerative returns, are freely applying the one he here refers to.

The regular order of the occasion, viz: Annual written crop reports, was here taken up. The showing was not flattering.

The question for discussion followed. It embraced the salient features of the potato crop. As to its profitability, opinion was unanimously adverse. Early Rose was the favorite variety, both for home use and for market. Early planting was the rule. The practice of drying well in corn-house or loft, and of keeping out of cellars until cold weather, seemed to be general.

Club adjourned to hold its next meeting at N. R. Miles' residence.

T. G.

Baltimore Co., April 27, 1880.

Deer Creek Farmers' Club.

This club met on 24th ult, at Mr. Jas. Lee's farm, near Thomas's Run. Fifteen members were present, and several honorary members and visitors, among them Hon. Herman Stump.

The committee to inspect the premises, consisting of Geo. E. Silver, Johns H. Janney and Wm. F. Hays, reported through Mr. Silver, chairman. They especially commended Mr. Lee's pure-bred Short-horn cattle, which were purchased from L. H. Long, of Kentucky. The herd embraces some remarkably fine specimens of the breed, including Lady Heddlleston 2d and Mary Leslie, both of which possess all the best points of their class. Mr. Lee also has 50 head

of fattening cattle in his stables, all in good condition. They noticed a field of grass, where the sod is very thick. This field, they were informed, had been in grass for 35 years. Mr. Lee will have 120 acres of pasture for 56 head of stock. Mr. Lee wintered all his stock from the corn and fodder on 13 acres. This the committee thought was surprising and a secret some of the club have not learned. Mr. Lee has some pure Berkshire and pure Chester hogs. It was remarkable that the Berk-hires were twice as large as the Chesters, all being of the same age—showing that the Berkshires will do better than the white hogs in the barn-yard through the winter. They also noted improvements in the buildings, the fine team of mules, the growing wheat, a garden of 1½ acres, &c.

The subject for discussion for the occasion was "Roads—proper time to mend; best modes of mending and keeping in repair; sizes and best plans for culverts." We are indebted to our friends of the *Egis* for a very elaborate report of the discussion; but the late hour at which we received it, and the crowded state of our pages, prevent our doing more at present than to give a general idea of the results at which the members had arrived, and nearly all of this very intelligent club gave their views upon the subject. The remarks of Judge Watters, which we give, would seem to cover most of the ground taken by the club; and it was generally conceded that turnpiking was the best means of remedying the difficulties which are encountered by farmers in the making and mending of roads.

Judge Watters said his theory about mending roads is for every man to make the roads he uses most better either by personal superintendence or urging upon the authorities to attend to them. He spoke of the energy and good judgment displayed by Mr. Cheyney Hoskins, years ago, in mending the roads in neighborhood of Thomas's Run, the good effects of which are apparent to this day. If farmers paid more attention to the roads around them it would be beneficial not only to the roads but also as an example to the rest of the county. On clay soils many roads are ruined, not only for one year but for a lifetime, by working them too deep. As little fresh dirt as possible should be put in such roads. Instead of digging out the gutters, take some earth from the sides of the gutters nearest the road and throw in the middle. Some roads would require four or five years continuous work to put them in good shape and order, without making bad roads. Mistakes are made in placing breaks across the roads. Many of them are not necessary, but where needed they should be made in the shape of a letter A. Such breaks will keep the water from the middle of the road and not prevent trotting. The best way to make culverts is not to make them at all. If you must have them, make them substantial and large enough to carry off all the water. They can be dispensed with by making depressions in the road. Some roads could be improved by gradually turnpiking them—not by simply hauling loads of large stone, shooting them in the road and throwing a little dirt on them. Roads should be mended as early in the spring as

possible after the frost is out, and afterwards as they need it. All the mending should not be done at one time.

James Lee said the first point to consider was the kind of soil on which the road is to be made. On sandy soils but little mending is needed. On white oak or heavy clay soils it is important to get the water off as soon as possible. The best way to do that is the question to solve. The road should be well rounded in the middle, and a blind ditch run along the middle. The centre of the road will then dry quickly and not wash out. Roads should be mended as early in the spring as possible, and under no circumstances in the fall of the year. Culverts are needed only at the foot of a hill, where a stream crosses the road. On level places an opening, well turnpiked, may be made across the road, to carry the water over.

Johns H. Janney agreed with Judge Watters, except that he would have all clay land turnpiked. A portion, if only a mile, might be turnpiked every year, with small stone. Where the soil is good roads are better without being turnpiked. Moving too much dirt is a great detriment to good roads. It is a mistake to spend the money on ten miles which should be used on two miles.

Messrs. Silver, Forwood, Moores, Munnikhuyzen, M. T. Marsly, Hays, Barnett, Morgan, Lochary, Glasgow, Austen, Lee, Stump and Dr. Magraw, all took part in the discussion, and threw much light on the subject, obtained from their own observation and experience.

None of the members knew of any cases of the pleuro-pneumonia now existing anywhere in their neighborhood.

Adjourned to meet at Geo. R. Glasgow's, May 22d. Subject, "Harvesting Clover."

Work for the Month—May.

Prompt and faithful performance of the duties now awaiting the farmers' attention is now essential.

The Corn Crop has the largest share, but, as a rule, preparations are well advanced, and in many sections planting begun or finished. We dwell for a moment on the necessity of thorough working. Begin this as soon as, or before, the grass and weeds appear. The use of a light smoothing harrow uproots and kills these before the deeper-rooted corn is up. Frequent cultivations not only destroy the weeds, but keep the ground open to the influence of the atmosphere, the finely pulverized surface acting as a shield to prevent the evaporation of the moisture from the strata underneath. Shallow workings, as a rule, are in our judgment to be preferred. Deep plowings break the roots and thereby retard development. Cultivated shallow, the soil is preserved in a mellow condition, and the weeds annihilated before much growth is made. As soon as the surface becomes crusted over after a rain, the cultivators should be run through as promptly as may be to mellow it up and admit the air and the warmth of the sun's rays.

Do not seek, in case planting has been delayed, to make up for lost time by slipshod preparation. Rather still delay, to secure, by thorough

use of the harrow and roller, the complete pulverization of the soil which no after workings can attain. Generally, the sooner in season planting can be done the better, the earlier start giving vigorous growth.

Potatoes need even more than corn, if possible, a clean open soil, all the better if it contains naturally a good percentage of vegetable matter. The main crop is by many not planted in this section till June, so that the forming tubers may not meet the usual period of summer droughts. Ashes, bone-meal and salt make a good mixture for potatoes, and super-phosphates, containing a percentage of potash, are admirable. These inorganic or mineral fertilizers are much to be preferred for this crop to coarse unfermented stable manures, the use of which is liable to give rough, ill-shaped tubers.

Root Crops.—We have only space to emphasize what we have said heretofore of the saving in hay, the maintenance of the flow of milk, the preservation of health in cows, which all ensue from the feeding of these. Besides these considerations, the policy of becoming familiar with the cultivation of the beet is undoubted, in view of the time, certain to come, when it will be grown in great quantities for sugar.

Tobacco.—Tobacco in bulk must now have special attention. Often enough the planter is satisfied to have his bulks examined by his hired man, who reports the bulks all cold; but it is too often the case that tobacco in bulk is cool, and, at the same time, funky. Nothing but the master's nose can detect that condition! When either funky or warm the bulks must be opened, thoroughly dried and brought back by moist weather before it can be bulked. If put up too light the same condition will again occur.

The tobacco-fly must now be anticipated. We recommend the following remedies:

1st. Keep the young plants growing by a judicious application of the very best fertilizers; that is the planter's chief hope.

2d. Apply, with unsparing hand, air-slacked lime within the bed after every rain. We would advise the doubting Thomases to try just one strip through the middle of the bed, or upon cabbage plants sown in the garden for the purpose.

3d. We have just received a recipe upon this subject from our indefatigable commissioner of agriculture, the Hon. Wm. G. Le Duc. He says: "Take one-third of a barrel of cow-dung, pour on this sufficient water to make, when worked in, a stiff paste. Dry the paste and powder it. Put this powder on the plants while wet with rain.

4th. Though we have no experience with it, we would suggest Paris green.

With the first and second remedy we have experience, and recommend them without hesitation.

Millet and Hungarian.—These may go in from the middle of May to the middle of July. A bushel of seed to the acre is sufficient. The German or Golden millet is preferred. That intended for hay ought to be cut before the seed ripens, when the stem becomes woody and loses its nutritive properties.

Fodder Corn.—When intended for curing for winter use this crop should be sown early, as it is more easily managed in the dry season. That to be fed green may be sown every two weeks. For dairy cattle, sugar corn is best. The pitting or ensilage of corn is attracting attention, and numerous tests with it will be made this season.

Orchard and Fruit-Garden.

There are many little things, or we might say much light work, in the management of the orchard, that should not be overlooked or forgotten in the press of labor incident to the advent of May. Trees set out during the past autumn or present spring, unless the planting was very carefully performed, may have some among them that the winds—while the soil was soaked by the rains—have blown down. Sometimes from other causes, they will get out of line; and, of course, they should be properly arranged before they become too firmly attached to such undesirable position; and, if not yet noticed and given attention by the owners of such, see to it without further delay.

Where budding was done last summer, and the "stocks" headed down this spring, the "natural" suckers that are thrown out all along the "stocks" should be removed, so as to give the "bud" a better chance, and let it monopolize all the energies of the root, as wood-making. *Grafts*, too, will need attention of this kind from time to time during the summer.

We once thought that young orchards, the first year after planting, were benefited by following after two or three times during summer, and rubbing off all the shoots thrown out along their stems, except what we chose to form the head from; but more extended experience in this matter has induced us to change our views somewhat, and our practice now is to let *all* grow the first year, and then prune the tree in the mild weather of the subsequent winter. The first year after planting it requires a great effort on the part of the tree to repair the injury (which is always more or less) inflicted upon it by the digging; and when we add to this the enfeebling influence consequent upon summer pruning, the drain upon the healthful vigor of the tree is such as to result in greater injury than if all the sprouts are left to grow for one season. This opinion we base upon several years practice, but we are fully alive to the fact that good orchards have been grown by the other practice.

If peach-growers who still believe it profitable and practice the cleaning of their trees of the grub that girdles them at the collars annually, will raise little mounds of earth five or six inches above the ground-level of the surface of the soil, they will find the labor of taking out the grubs next fall greatly facilitated, as the mounds need only then be leveled to expose the larva of the insect that deposits the egg during summer.

In the fruit-garden, if there are any grape-vines not secured by tying to trellis or stakes, they should have attention before much growth is made, as otherwise the young growth is liable

to be broken off by the winds. Newly-planted beds of *strawberries* should be looked after; and in order to insure a good healthy growth of plants, the blossoms should be removed, thereby preventing any fruit the first season to weaken the plants. Begin timely with the hoe and keep the weeds out of sight. The same course of procedure with other small fruits will be advantageous, more especially in keeping the soil well and thoroughly worked, and thereby keeping clear of weeds.

The Poultry Yard.

By G. O. BROWN, Montvue Poultry Yards,
Brooklandville, Md.

Hints for May.

THE CHICKS.—May should be one of the busy months with the poultry-breeder. The broods of young chicks should be well taken care of, in order to keep them growing rapidly. Move the coops often on fresh grass, and feed little but frequently for the first four weeks. Watch closely for vermin. Should one of the chicks appear droopy, look for lice; and if it is so bothered, grease its head, under the wings and over the vent. Where one is thus found, it will be well to treat the entire brood and mother the same way—on the rule that prevention is a good doctor. See that plenty of fresh water is given often, but do not leave any standing in the hot sun for them to drink. On fine days let the hen out; both she and the chicks need the exercise they will have by running around. Whitewash the coops inside and out, or outside only, giving the inside a thorough washing with water strongly impregnated with carbolic acid. If you have a good many chicks of different ages and sizes running together, the stronger ones will be apt to run over the younger and smaller ones. A good plan to avoid this is to make what I call feed-pens. I make them on the simple plan of the children's *cob-house*. First lay down two sticks the distance apart your sticks will reach, allowing room to lap a few inches, layer after layer being thus put on, drawing each layer in slightly, so that, when it is about a foot high, you have it six or eight inches smaller on top than the bottom; then place a board on top, with a large stone on it. The thickness of the sticks should be large enough to admit those you want to feed by themselves, and exclude the others. By taking laths, a very neat feeding-pen may be made, by cutting them in one-foot pieces and nailing them to strips, with the long laths on top. This is light, and can be moved to clean ground as desired.

THE HENS.—Especial attention will now be necessary with the setters, as the warm weather will naturally bring plenty of lice. Should the hens while off feeding seem inclined to pick among their feathers quite a good deal, her nest should be remade. First remove all the eggs carefully; and if the nest is situated so you can with safety do it, burn the nest where it stands. Replenish with fresh material, and sprinkle on some flour of sulphur. Replace the eggs; and after the hen is again on, put one hand under her; and as she ruffles up her feathers, which

she is most apt to do, dust some sulphur among them. It will not take fifteen minutes, and the trouble is worth the time; for it may save a hen from being driven from her nest, and a loss of an entire setting of eggs. If your garden-making necessitates the cooping up of your hens, see that they have plenty of green food. They are very fond of pusley and lamb's quarter weeds. The latter weed is known in some parts of the country as "pig weed." Poultry are very fond of it. Whenever you dig up sods you have no use for, they should be put in the poultry yard. An occasional run-out for an hour before sundown, they are not apt to scratch much, but fill their time (and themselves) eating grass, seeming to know it will soon be bedtime.

The Income from Poultry.

In no other country do the women enter so many fields of activity as is the case in France. The great drain upon the male population of that country, to fill the armies of Napoleon, commenced about the beginning of the present century and continued for years, whereby the numerous branches of business which women could possibly undertake were necessarily assumed by them for the support of their families; and those who have ever visited France have seen how universally many of the trades and other enterprises of life are apparently under the entire control of women. This remark is applicable to a branch peculiarly belonging to country women, the extent of which but few would have imagined. The Dublin "*Farmer*," in urging the example of the French women upon the attention of their Irish sisters, remarks:

Let our farmers' wives take a lesson from the report just presented to the French Government concerning the production of eggs and poultry by their sisters of the farm-yards of France, which states that in France there exists 40 millions of hens, followed by 100 millions of chickens, 10 millions of which are destined to perpetuate the race. These 40 millions of hens lay two thousand millions of eggs a year, or on an average 50 each, which, at one halfpenny each, (the usual price paid when fresh to the farmer's wife,) bring in £4,200,000. If to this we add the money paid for the remaining poultry, lean and fat chickens and capons, at 1s., we arrive at the astounding total of £9,000,000 produced by the single industry of poultry-raising by the farmers' wives in France, and this without reckoning the geese, ducks and turkeys, which increase the amount by about thirty millions sterling. This statement is on official authority; not the mere calculations made by a statistical brain, but the result of inquiries made in the different poultry-producing districts of the country. The work of poultry-raising is entirely executed by women in that country. The woman at the farm buys, sells, watches, estimates, and contracts with the French and English dealer, and by her sole industry adds to the wealth of the household in prosperous

times, and supplies the deficit arising from blight or failing crops, when the evil days come on. It is hard to think that, while the Irish mother and her girls at the farm all so full of health, activity and intelligence, should be compelled to let all these valuable qualities lie idle for want of a motive for their employment, there may be on the other hand a vast number of speculators who would only be too glad to find such profitable investment of time and money as this rearing of poultry has proved for the last half century both to the dealer who buys and the villager who sells, for it seems that both grow rich in a very few years in France.

The lesson is well worthy of adoption in this country. The large number of fowls raised in France is, no doubt, owing to the extensive use of incubators, which are really machines for multiplying chicken life and producing the countless millions of eggs which go to add such enormous wealth to the country. We have often and repeatedly drawn attention to the use of these machines, and again, at the season when fowl production is at its height, we once more desire to impress upon farmers and country gentlemen that they can no longer neglect the smaller economies by attention to which foreigners add so largely to their incomes.

PRACTICAL ARTIFICIAL INCUBATION, by J. F. Ferris, editor *Poultry Monthly and Poultry Weekly*, Albany, N. Y. This new work comes in a most seasonable time, and describes, in an interesting way, the methods by different machines of hatching chickens. It has also chapters on rearing chicks, diseases and remedies therefor. It will be read with interest by all. As illustrating the practicability of the incubator method of hatching, my experience this season with the "Centennial" machine, an illustration of which we gave a few months since, has been a better average than with my hens. The last 22 eggs put in, 21 hatched. From 40 put in, 37 hatched. Out of a hundred and upwards hatched by the machine all are yet growing nicely. G. O. B.

The Millers' Exhibition at Cincinnati.

This exhibition will open at Cincinnati on 29th May, and from the entries already made will be one of the most unique and interesting shows ever made in this country. All articles are required to be on hand by the date above named, and will be received after 3d May.

The Board of Commissioners requests the earnest co-operation of all the Boards of Trade in this country in making the grain exhibit one of special interest to visitors from all parts of the country and Europe.

Everything connected with milling, mill-machinery, buildings, &c., will be on exhibition.

There will be a meeting of delegates from all parts of the country (including representatives from all the Boards of Trade,) held June 2d and 3d, to consider all questions relating to Inspection, Grading, Elevation, Transportation, Fire and Marine Insurance of Grain stored and in transit, and all other questions of interest to the grain trade.

Horticulture.

The Season—Future of Wine-making in Maryland.

Messrs. Editors *American Farmer*:

Spring now seems to have shaken winter from her lap, and I am gratified to be able to report to you that, in this immediate section at least, the indications are favorable for good crops of fruit. The weather during the first half of April has been rough and frosty, and some of the peach buds have been destroyed, but there are quite enough left. The pear and cherry trees are now loaded with bloom, and, it is to be hoped, will escape injury; though an old weather-prophet near me says we shall have a killing frost early in May.

A welcome rain on the 15th, followed by two or three warm days, has brought most of our vegetables above ground, and the insatiable potato-bug will soon invade our gardens. Do you know whether the *London Purple* can be relied on for its destruction? It is said to be an effective poison for such insects as *leaf-rollers*, *canker worms*, &c., and much cheaper than *Paris green*. What are its advantages or disadvantages as compared with that article? It is also recommended as being more *diffuse* than *Paris green*,—one pound of the *Purple* being sufficient for forty pounds of the diluents when it is used in the dry form.

My grape-vines have wintered well, and promise an abundant yield, as usual. With an experience of 25 years in grape-growing in this county, I have never known the crop to be injured by spring frosts. Yet, with a climate and soil so favorable for wine-growing, but few of my neighbors seem disposed to embark in the business. This I have long regretted, as no individual vineyardist can establish a reliable market for his products. When a number of persons in the same vicinity engage in wine-growing, they seldom fail of success. In the wine countries of Europe but few of the grape-growers are also wine-makers. It is a common saying there that no small grape-grower can make good wine. This, because good wines can best be made in large and costly vessels and cellars. There the wine manufacturer stands in the same relation to the grape-grower that the miller does to the wheat-grower,—always furnishing a ready market for the new crop. Whenever enough grapes can be grown in any neighborhood to invite the employment of the necessary capital and skill to make good wine, the business, I think, will become sufficiently remunerative. In other letters to your journal, in former years, I have taken this view of the subject, and have urged co-operation. And now, wherever in the United States the business of wine-growing is prosperous, we find that it is conducted in this way.

The following extract from a recent California letter, published in the *Baltimore Sun*, relates the same experience in that State, viz: "Small wineries will not secure uniformity of brands, which commerce requires. Thirty small 25-acre vineyards at Anaheim, each making its own

wines, failed of success; but by combining in a single factory, and getting standard uniformity, their wines got repute, and soon brought wealth to the colony."

And again in another letter the same correspondent says: "In nothing is the difference more pronounced between the raw and the manufactured material than in wine. Thirty cents a gallon is the price the small wine-grower gets. The wine merchant stores it three years and gives it ripening care, when it brings him from \$1 to \$1.25, subject to some loss from evaporation. *Let Baltimore be assured that there is big money in wine, and that it is pleasant occupation, with a vast future, inviting capital to enter and enjoy.*"

Now, Messrs. Editors, you may safely assure your readers in this county—those of them who live upon the good sandy loams of the tide-water section—that they could certainly count on a crop of 400 gallons per acre, which, at the above low price of 30 cents, would pay better than tobacco, and be produced with less labor.

Yours, truly,

G.

Anne Arundel Co., April 19th, 1880.

[NOTE.—Prof. C. V. Riley, distinguished for his practical judgment, late entomologist of the Department of Agriculture and now president of the U. S. Entomological Commission, reports in the *American Entomologist* that *London Purple* has considerable advantages over *Paris Green* in its greater cheapness, which obviates the temptation to adulteration; in its more finely-pulverized condition, requiring to be effective only $\frac{1}{4}$ lb. to 18 lbs. of diluents, such as plaster; and in its color, which prevents its being mistaken for innocuous substances.—*Ed. A. F.*]

Pear Blight.

Messrs. Editors *American Farmer*:

In the *American Farmer* for February is a letter from Dr. Stewart on the blight, in which he, in my opinion, falls into the error of most of our writers, who seem to make but one species of this disease. The blight the Dr. describes is to my mind quite another thing from the kind which did so much injury to my trees the past season. The first is well described as a "dry gangrene," but it is not near so formidable as the second, being usually confined to the limbs, and may be checked by their removal. The second not only attacks the limbs but the stem of the tree, and is not characterized by a drying up of the parts, but by an apparent excess of sap, causing a rupture of the bark and an outflow of the superabundant fluids. It was a blight—or call it what you may—of this kind which, 3 or 4 years ago, swept over the pear trees on my neighbor, Dr. Riley's, place, destroying nine-tenths of his young trees which grew in cultivated ground, and seriously affecting most of the old ones which were in sod; even the "choke-pears," which Dr. S. pronounces "invulnerable," did not escape. Strange to say, none of mine were attacked that year, but last season

I was not so lucky. In an orchard of 80 young pears I lost about 20, and may find more of them in the spring too far gone to save. My trees in sod around the house and along the lanes all escaped *this form* of the disease, but I found two of these affected with the form described by Dr. S., but unfortunately for the Dr.'s theory one of them was a "choke-pear." As to the cause of the blight, I am satisfied that the use of too much stimulating manure invites it if it does not cause an attack. The young trees of Dr. Riley above spoken of, stood in ground that had been cultivated several years as a truck patch, manured with stable or yard manure; but that this was not the *sole* cause of their destruction was evident from the fact that other trees on the same place standing in sod were also blighted. Experience has made me cautious about applying barn-yard manure near to the roots of pear trees. Apples thus manured will flourish where pears would perish. My trees that suffered last year stood on rather thin soil—had been sparingly manured chiefly in "the hill," and (care being taken not to make the hills too near the trees) planted with cucumbers, melons, tomatoes, egg-plants, and other such crops. The ground had been thus cultivated two seasons after having laid three years in clover. I had no idea of any bad results from the manure applied, and attribute the attack of the disease to the heavy rains we had during the latter half of summer.

As to budded or grafted fruit being constitutionally feebler than natural, I think it probable, and that this is specially true of the pear my experience leads me to believe, and hence the greater liability of the finer varieties of pears to attacks of disease; but I cannot say with Dr. Stewart that the natural seedlings are "invulnerable" to the blight.

To sum up, then: 1st. I believe there are two well-defined and distinctly-marked forms of diseases in the pear tree in this region. One characterized by a shrinking and drying up of the limb or part affected; the other by a rupture of the bark and an outflow of the sap. Is this opinion correct?

2d. While trees growing in highly-manured soils are far more liable to disease, those in thin soil or in sod ground are not always exempt.

3d. Natural seedlings are not invulnerable to the attacks of the disease.

Baltimore Co.

A. W. SWEENEY.

Gardening Then and Now.

Messrs. Editors American Farmer:

I do not propose to go over the whole ground, but will single out a few features illustrative of the simplicity and effectiveness towards which we have been tending.

From Peter Henderson the public first learned not only that the great majority of plants in pots would flourish luxuriantly in a simple, uniform compost, but also that the time-honored ceremony of crocking (draining) the pots might, to the same extent, be profitably abandoned. It is not probable that the draining of flower-pots will ever wholly fall into disuse, but

is it not worth something to realize that most of the time hitherto spent in this operation has been time thrown away? Some gardeners find it as hard to give up the potsherds as to give up their tobacco. It is possible that certain plants *must* be so treated, but in many cases it is better to complete the drainage by adding a little more sand to the compost than to go back to old habits.

In a knowledge of the conditions under which the raising of plants from cuttings will be *uniformly successful*, marked progress has also been made. The plant-propagator of old was a cunning artificer, whose individual skill died with him simply because it was incommunicable. Such men were successful without precisely knowing why. Our *authority* clearly shows that any man of common sense who will carefully keep within certain limits of action cannot fail of success. The mystery is gone, and many a superstitious notion has gone along with it. Equally mysterious was the skill required in the growing of orchids, which none but experts dared to handle. Thanks to your able correspondents we have about come to the conclusion that they are a much surer crop than early cabbages or cauliflower.

How careful we used to be to have the water in the green-house of a proper temperature. Mr. H. assures us that there is no appreciable benefit in taking off the chill. I remember recording an instance of a "Royal George" geranium that I know to have been watered daily for forty years with cold spring water, yet some writers continue to affirm that a dash of cold water is permanently injurious to a newly-planted hardy tree. Can it really be so?

In the vegetable garden the horse-radish patch used to be a sorry sight. In digging up a few roots for family use, the crowns were cut off and returned to the soil, so as to perpetuate the crop; but *such* a crop and such a contrast to the clean, orderly culture of the root in the present day! Akin to this improvement is one suggested by a correspondent of the *American Farmer* to give the old asparagus-bed a new lease of life, by lifting the roots now and then, and replanting in well-enriched fresh land.

The *plow* has ever been a distinctive implement in an American kitchen garden, but progress dates from the time that its use came to be recognized as a great advance on European methods. The plow is king, and fruit trees in its way are as much out of place as surface-stones in the path of a lawn-mower. Now, if we only had selected soil and aspect for our vegetable gardens, with a high wall to break the North wind and the rays of the summer sun from a portion of the land, there would be some satisfaction in working them.

It is a trite saying that there is nothing new in gardening. Very true, it would not be an inviting field for Mr. Edison; but we have made some progress and broken loose from many an old prejudice. Our garden literature has improved: it contains more solid meats and less trifling details than formerly. Peter Henderson's works are models of their kind; and if I "swear" at all, why shouldn't I swear by him? He has taught me more than I learned in a long

apprenticeship, and anticipated for me years of experience; and yet I can hardly say that I know the man. The first time I saw him in his garden he looked like a smart foreman; few would have taken him to be P. H. himself. I am told he is hard at work on still another gardening book. Be the specialty what it may, it will not suffer in the treatment. Peter Henderson is a representative man, and in making use of his name so freely I would not be thought for a moment to detract from the high esteem in which we hold the many able horticulturists whose names are household words with the readers of the *Farmer*. J. W.

Rhododendrons, Ghent Azaleas, &c.

Whilst we do not seek to deprecate bedding plants as such, and might even go a step farther, and say that, for a place making any pretension to summer display, they are indispensable, we do protest against the monopoly accorded to them. For large towns, cities and their immediate suburbs, owners of property have a somewhat circumscribed list of subjects from which to choose; but once outside the smell of city smoke, gas, &c., there can be no plausible excuse offered for turning a cold shoulder to so many truly beautiful plants.

Can any of your readers give a valid reason why it is almost impossible to find a good clump of rhododendrons? It certainly cannot be said that all are too tender, since one kind at least is indigenous to a sister State; and we do not hesitate to say that, if *Kalmia latifolia* had been sent from Japan instead of being a native wild plant, it would have been as highly thought of here as it is in England.

Then there are the Ghent azaleas—fit companions to the rhododendrons—scarcely heard of. And of crateagus there are at least three varieties certainly worthy attention, viz: Double white, double scarlet and double pink. Then, again, there are numerous floral beauties which are in their beauty and past before the bedding stuff proper can be turned out, neither expensive nor difficult to handle. WAVERLY.

Window Plants.

It were perhaps as difficult to give the names of the best six plants for window cultivation as to name the best six varieties of pears for all purposes. Tastes differ, and apart from what fancy might dictate, the conditions under which plants are expected to grow in the windows of dwellings are so diverse, and withal—in many instances—so inimical to plant growth that it would be difficult to name even one ornamental plant that would be likely to give general satisfaction. If we were asked to name the one variety most likely to give general satisfaction we would name the Calla Lily.

Some varieties of *Eupatorium* make excellent window plants: *Strelitzia*, *Imantophyllum*, some varieties of palms, &c., are handsome and useful under certain conditions. Amongst ferns, perhaps the most general success is with *Pteris*. We have also some varieties of *Gymnogrammas*

doing splendidly in a room. Some of the hardy ferns from the woods flourish and have quite a nice appearance amongst other things. For covering surface, &c., we think Kenilworth Ivy superior to many subjects used. *Farfugium grande* for a low-growing plant is distinct and generally satisfactory.

After all has been said, when we desire a plant that always looks cheerful, blooms at any season of the year, and that will accept fair, square treatment as *one of the family*, in place of the stand-offishness of some of the boarders mentioned, we have to fall back on the *Geranium*, and for a climber perhaps *Madeira vine*. N. F. F.

Vegetable Garden.

With the help of your correspondents who have given their experience with *early cabbage*, we may now safely conclude that, if sown before the 20th September, there is great risk of their going to seed; and if delayed until that date or later, they must have a very rich and perfect bed so as to ensure large plants for setting out. Should like to have the date for sowing late cabbage, cauliflower, &c., equally well settled. I have hitherto sown in May, but by the advice of a neighbor I sowed them this spring on the 8th April. A few days before or after is of small consequence at this season; but, by sowing early, we have more time to resow if destroyed by the fly.

Every one who has the opportunity should make some little experiments in the course of the growing season. What others have practiced and confidently recommend may still be an experiment with us; thus after reading the articles in *Scribner*, by E. P. Roe, on strawberry culture, I have loosened up the ground thoroughly between the rows with the sub-soil plow, and cannot but wonder that I was afraid of it before. Then, again, having failed three years in succession to get onions small enough for sets, I have tried the *Pelham* method, which consists in covering the seed with two inches of sand. Will those who cover their early potatoes with straw or litter, instead of earth, kindly give us details and results? And will those who succeed in heading cabbages and cauliflowers in pits and cellars in winter please do likewise? My success in heading cauliflower and in ripening green tomatoes, has in neither case been satisfactory. I am told that out West they pit the green tomatoes in the open ground, but I have never had faith enough to try that method. Who succeeds with Hubbard squash, and how do they keep off the borer? These, and many other little matters, are well worth discussing.

A common error with beginners in setting out *forwarded* plants of any kind, such as potatoes or melons, is to expose them too early. The transplanting should be delayed until plants or seedlings of the same sorts might be expected to show above ground. Tomatoes may be set out the first shower in May, and by the 10th in rain or shine. The last sowing of peas may then go in; as a rule they will not do well later. Just the time to sow bush squash, plant Lima beans and sow potatoes for the late crop.—

Several plantings of sweet corn and string beans must be made, and towards the last of the month sow melons and cucumbers. Hereabout we have the climate, but not the soil, suitable for melon-growing, and they can be bought much cheaper than they can be raised. The bulk of the winter beet should be planted in May, but some should always be tried a month later, so as to ensure their being tender. The weeds will make no end of trouble if they get a foothold this month. It will not pay to withhold help.

JOHN WATSON.

Baltimore Co., April 13.

Lettuce—Asparagus.

Hardly any vegetable in the salad line is in more general use in this country than lettuce, and yet few farmers enjoy it but for a few weeks in early summer; whilst, with very little trouble, a full supply might be on hand at all times. Here the demand on us for lettuce is such that we must have it ready for the table every day in the year. During the hot months of July and August of course it is but little else than leaves but then Endive supplements it well. My practice is to sow a little lettuce seed the first of every month from March to October. That which is sown in September is set in cold frames in October, and the sashes put over it by the last week in the month, or earlier if the weather gets frosty. This planting is generally all cut before the middle of December. The sowings in October are made in a sheltered place, and protected with a mulch of straw around the plants, so that they can be gotten at any time. As fast as the heads in the frames are cut their places are filled with plants from the open ground, so that we have a constant supply coming on at all times, until the plants set in the open ground late in March are ready for use. For earliest use in frames and for constant stand-by, I use the curled Simpson. This variety does not make a hard head, but it grows quickly to a large size, and is very delicate and crisp. When my cauliflower plants are set in the pits, I plant between them the Boston market lettuce, a variety of Tennis Ball, which makes a compact hard head. These are cut out in February, giving the cauliflowers room to grow. For spring sowing for plants to set in the garden, I use only the Hanson, a species resembling the old curled India. This makes the largest head of any lettuce I know, and stands the hot weather well. For later sowings, I use the Boston fringed lettuce, the leaves of which are very ornamental; and by frequent sowings, I manage to have lettuce until the weather is suitable for heading varieties. We have grown during the past winter, with a very moderate number of sashes, nearly 2 000 heads of frame lettuce. Any farmer with a few sashes and mats can easily keep a supply of lettuce to vary his winter diet; and if once tried, he will not give it up, as lettuce grown in cold frames is far superior to the article from the open ground.

Asparagus.

Last summer I made an experiment with asparagus which is well worth relating as show-

ing the wonderful vitality of this plant. We had here an old asparagus bed, which had been in use for nearly twenty or more years, and had become so choked with foul weeds that it was quite unproductive. I therefore determined to destroy it and raise a new bed. About the last of June, after cutting was over, the men were set to work with picks and mattocks to grub out the old bed. The roots were so matted in the soil that the greater part of them were mere dead stumps of great size; but I found that they turned up a great many strong and thrifty-looking stools. It occurred to me that perhaps these might grow, so I had a few furrows laid off, and planted in them all the good roots found. During the drought of July little was seen of them, and I concluded they were dead; but the last of July the rains set in and the tops shot up strong and made a good growth before frost. The result is that this spring we are getting from these rows nearly as much asparagus as we got from the whole of the old bed last year, and will have a moderate supply until my new bed gets old enough to cut, instead of being entirely without asparagus for two seasons as I expected. I never tried planting asparagus the last of June before, but this experiment shows what can be done with this plant in emergencies.

Kainit for Lawns.

Some persons are recommending kainit as a dressing for lawns. Will some one who has had some experience with this salt, say about how much is a good dressing per acre? Last year I used on part of our lawns here one ton of fine bone-meal. This season I have dressed them with 1½ tons of ammoniated phosphate. The grass is improving rapidly under this treatment. I should mention that our "lawns" here cover about 25 acres of land.

W. F. MASSEY.

Hampton Gardens, April 26, 1880.

New Vegetables.

Owing to the unfavorable season for vegetable growth last summer, it would be hardly fair to pass an opinion upon the merits of any new aspirants for public favor. There are some things, however, of which we think sufficiently well to give them at least another year's trial.

First, we mention the "Queen Tomato," a fine, solid and smooth medium-sized fruit, of good color and flavor, and, so far as we were able to judge upon such slight acquaintance, contains too many good points to be lost sight of. In celery, we have "Dwarf Golden," a solid good variety so far. We sent a sample of this to our friend Mr. Fraser, of Patterson Park, and he agrees with us in the opinion that it is deserving further trial. We usually grow a little of some red—last season of "London Red;" and although not quite positive in the matter, we do not think the red anything like as profitable as the white varieties.

N. F. F.

MR. R. J. HALLIDAY has just published a work on the *Camellia Japonica*, the only one so far, we believe, in America.

Maryland Horticultural Society.

The April show, held on the 1st ultimo, was not an extensive one, but comprised many handsome plants and flowers, whilst the attendance was very large.

The following awards were made: Best six Stove or Greenhouse plants, Certificate of Merit, R. W. L. Rasin; best 12 Azalea Indica, \$3, best 10 Orchids, \$3, W. H. Perot; best 12 Zonale, \$2, and best 6 double Geraniums, \$2, best 50 Bedding Plants, \$3, best 24 Cut Pansies, \$1, R. Cromwell; best 6 Ferns, \$2, best 6 Cinerarias, \$2, R. W. L. Rasin; best basket of cut Flowers, \$2, S. Feast & Sons; best 12 Rose-buds, \$1, best 12 cut Tulips, \$1, John Cook; best 6 Hyacinths, \$1, W. H. Wehrhane.

A fine collection of plants from Patterson Park was much admired, as was a vase of flowers, mainly Gloire de Dijon Roses, plucked from an open garden in Charleston, S. C., and deposited by Dr. J. J. Chisolm.

TRIALS OF IMPLEMENTS.—The Agricultural Society of Montgomery Co., Md., in consequence of the dissatisfaction in respect to the award of premiums on *binders* at their last show, have determined to offer a premium of \$25 for the best binder entered for premium at a field trial to be held in the harvest season of 1880, of which due notice shall be given. The society can in no other manner determine the merits of this class of machinery.

It is also proposed to the same society that if a field contest of *mowing machines* can be had during the coming harvest, "and at least four different machines shall enter, the losers in the contest would purchase the winning machine and present it to the society." It was ordered, upon motion, that the secretary (C. W. Prettyman, Esq., Rockville,) publish such a proposition, with the statement that if at least four different machines apply to the secretary for admission to this trial before the 1st day of June next, the trial shall take place upon the terms aforesaid.

Report of Judges, International Exhibition, 1876, Group XXIII.

DRAFT OF REAPERS AND MOWERS.

The question, which Mower or Reaper is the lightest draft? is a question of great interest to farmers. To settle the matter definitely and by reliable authority, we give below the draft of the principal machines contesting, from the report of the judges (five American and five foreign) of the great Reaper and Mower trial that took place near Philadelphia, under the auspices of the Centennial Commission. At that trial there were twenty different machines tested by the dynamometer. As several of the manufacturers of the machines there tested have since failed and gone into bankruptcy, we quote the draft only of such machines as are made now, and in quantity sufficient to entitle them to notice.

Twenty-two machines were exhibited, all but two being tested on the dynamometer. This

important business was undertaken by Messrs. Oldendorff and Bruce, the following valuable table being the result of their labors:

No.	EXHIBITOR.	HEIGHT OF CUT.	WIDTH OF CUT.	TOTAL DRAFT.	DRAFT PER SQUARE FOOT OF GRASS CUT.
1	Ward, Mitchell & Co.	1 1/2	3 9/4	131	.343
2	Russell & Co. (Peetere)	1 1/2	4	157	.388
3	Rochester Agricultural Works.	1 1/2	4 1/2	206	.392
4	W. O. G. (Haymaker)	1 1/2	4 1/2	165	.388
5	W. O. G.	1 1/2	4 1/2	172	.398
6	Adriance, Platt & Co.	1 1/2	4 1/2	200	.400
7	C. Aultman & Co.	1 1/2	4 1/2	178	.408
8	W. A. Wood	1 1/2	4 1/2	222 1/2	.513
9	Bradley Manufacturing Co.	1 1/2	4 3/4	182 1/2	.429
10	Johnston & Co.	1 1/2	4 2 1/2	204	.484
11	W. Farr Goodwin	1 1/2	4 3/4	186	.437
12	Osborne & Co.	1 1/2	4 7/8	260	.554
13	The Screw Mower Co.	1 1/2	4 2 1/2	235	.555
14	Keystone Mower Co.	1 1/2	4 5/8	228	.509
15	McCormick	1 1/2	4 5/8	190	.467
16	Chase & Co.	1 1/2	4 3/4	225	.446
17	Osborne & Co.	1 1/2	4 3/4	228	.471
18	Hubbard, (Meadow Lock),	1 1/2	4 11/8	228	.471
19	Aultman, Miller & Co.	1 1/2	4	140	.350
20		1 1/2	4	171	.427

It will be seen from the above that the draft per square foot of grass cut varied from .288, in the case of the Eureka machine, (direct draft,) to .564 in one of Osborne's [manufacturers of Kirby and Wheeler machines] machines, or nearly 100 per cent. In reality the difference was not quite so great, inasmuch as the Eureka cut a quarter of an inch higher.

[The toughness of timothy stalks near the ground is well known, and the advantage in the draft gained in this quarter inch is immense.]

It will be seen from the above that where the Champion draft was .343, that the Osborne machine, in cutting the same quantity, would draw .564; Buckeye .427; Johnston .484; McCormick .467; Adriance .470, and Wood .513.

JUDGES: American—John P. Reynolds, Chicago, Illa.; James S. Grinnell, Greenfield, Mass.; James Bruce, Corvallis, Oregon. Foreign—John Coleman, Great Britain; Fermin Rosillo, Spain; Pedro D. G. Paes Leme, Brazil. Ekedo Kenzo, E. Oldendorff, John Bradford, assigned from Group IV, and Geo. E. Waring, Jr., from Group XXVI.

THE WOOL-GROWERS' Association of Berkely Co., W. Va., held a meeting at the court-house on 10th April,—Jacob Ropp, Esq., in the chair. A constitution was reported by the committee appointed at a former meeting and adopted.

The officers elected at the first meeting of the association were declared eligible for the ensuing year, under the present constitution.

Jacob Ropp, S. O. Cunningham and Jacob Miller, were appointed to prepare an address for the benefit of the wool-growers of the association.

Home Department.

Moral Stimulants.

Thirst for praise or commendation is as clearly a part of our nature as the thirst which craves material refreshment, and if gratified in a manner as innocent and harmless as is physical thirst by nature's provision for the purpose, it will be only the healthful sustenance one may be allowed to expect; but there seems, both morally and physically, to be a strong proclivity to stimulants, and in this respect the analogy between them is complete. Just commendation, proportionate to the occasion for it, is due to all; it develops and fosters worthy qualities by which deserving actions are instigated, and is the sunshine which gives color and thought to good purposes. But though the danger lies in its degeneracy to undue praise and the too free use of it, as there is in over-indulgence of any of our appetites, the slave to the desire for intoxicating drinks is scarcely more an object of pity than one who has from childhood been pampered by over-much praise.

The mother-pride which discovers in every natural development of her child some remarkable precocity, of which embellished recitals are freely given in the child's presence, is usually ready to lavish upon it unbounded praise upon the slightest pretext for so doing. The merest act of courtesy or kindness is so overrated and exalted upon as to give the child a vain consciousness of having performed something more than was expected or required. Of course time removes much of this, but there remain upon the moral habits of many old people impressions thus made in their childhood, which have proved the cause of a moral dyspepsia throughout their whole lives.

A child's character is a dainty thing, requiring the utmost care in its shaping, and it seems such a pity that it should so often be marred by the worthless handling of those whose chief ambition undoubtedly is to promote its loveliness. The little ones come to us directly from the hand of the Great Creator; and if we could only know the extent of our responsibility as to the condition in which they return to Him, we might think less of their little airs and graces, and concern ourselves more as to their heart and soul development.

Their propensities for wrong-doing are not so much due to innate depravity as to our carelessness or ignorance in regard to their training, and in this respect there is no error into which we so easily fall, nor one more fraught with danger to their future happiness, than that of stimulating to duty by inordinate praise; it so easily becomes the main incentive to well-doing, and unless accorded freely creates discontent and unhappiness.

Parents themselves grow weary of the incessant demand; and when their children reach the age when they might reasonably be expected to perform their duties on principle, look in vain and feel aggrieved because their children stand waiting for the usual incentive. In the selfishness and self-consciousness thus revealed, they should blush to recognize their own undoing of what might have been a lovely character.

CERES.

Philadelphia Letter.

One of the novelties in Philadelphia is a National Cooking Club, which meets in a good-sized house in a central part of the city, and is presided over by a lady graduate of a Boston School of Cookery. The two parlors on the ground floor are devoted to lessons and practice in the art, a large gas stove being used, and instructions are given several times daily to the different classes in waiting—to the daughters, wives and mothers of the rich. Demonstrative lessons, in which various articles are cooked before spectators who taste of the dishes, samples being carried round to each, and to servants preparing for situations. The importance of such teaching can hardly be overestimated. I was at one time for two or three days with a family living in the country, during which the only morsel I could eat at the table was some kind of preserve, jelly or fruit, the only things in fact the lady knew how to prepare. Mrs. L. had had a family of twelve children, and professedly had kept house all that time, never knowing how to make a loaf of bread, cook meat or vegetables. Her daughters had grown up and married without any other knowledge than that which they had derived from their mother. I had never realized before that it was possible to ruin food, the raw material of food, so, until then. Good cooking is far from being natural or easy to every woman; and yet to know how to prepare ordinary dishes well, is, and will be found, indispensable to every one. And as such knowledge cannot always be obtained by all at home, it is exceedingly desirable that there should be a place of public instruction. It is probable that Baltimore will soon follow the example of Philadelphia in this respect. Another point in which the Quaker city is far ahead of our own, is the number and excellence of its restaurants, which, for variety and cheapness, are not equalled by any in Paris. As you walk along the principal streets, circulars and bills of fare are frequently handed you, with long lists of ten and five-cent dishes. I have often dined for ten and fifteen cents well and abundantly in these, and have an excellent appetite. For five cents one may get a good-sized bowl of vegetable, oyster or chicken soup, and three slices of good brown bread. Unquestionably such resorts are great aids to health and temperance, and sorely needed in our midst. The restaurant in which such meals are furnished is in a public thoroughfare and well fitted up. In the number and size of its stores the city is also far in advance of any southern one. Three large fronts on Chestnut St. are covered by the old house of Sharpless, employing more than four hundred persons, sending through its mailing department many hundreds of samples in untied letters daily to far off States; cutting up for this purpose thousands of yards of silks and costly goods—the profits of the whole in a single year amounting to five millions of dollars. One is more struck with this state of things, and the facilities thus offered customers thousands of miles away, when we remember that in London many large dealers are exceedingly unwilling even to show goods to possible customers across the counter, unless they are sure

beforehand that they will be buyers. The American returns goods if not satisfactory, while John Bull seriously objects to lifting them over the counter, unless sure that he will not return them unsold. J. B. M. BRISTOL.

Carpet-making Made Easy.

Take two kitchen chairs, or any others which have the slats in the backs arranged vertically; place them at a distance from each other that will suit the length of any board you may chance to have for the purpose; then rest the board with one end upon each chair, allowing the ends to extend a little beyond and passing between the upright strips or rounds in the backs of both, which brings the board with one edge up and holds it in that position. Having thus prepared your support, you take the two breadths of carpet which are to be sewed together, allowing a breadth to hang upon each side of the board; you then begin at one end, and, with a carpet-tack driven at regular intervals, hold the edges with the figures carefully matched all ready for sewing. It being thus arranged, one may seat herself comfortably beside it and sew any carpet, even the heaviest, with as much ease as ordinary sewing, not having the weight or continual adjustment to contend with. As fast as the one length of the board is completed, the tacks are withdrawn, and the same process is repeated to the end of the breadth, and to the end of the carpet-making.

CERES.

Children's Health.

A common practice is to give opiates to children, paregoric or Dover's powder, to keep them quiet. Now, both of these are powerful preparations of opium which a sensible medical man would not wish to prescribe to a child. Children should not sleep on large pillows in summer. A feather pillow heats the head and helps to throw them into perspiration. A large pillow interferes with the spine and helps to make a child crooked and weak. If you wish to destroy a child's appetite let him eat cakes and sweets between his meals; these clog and surfeit the taste. It is better to give these directly after a meal. I knew a mother who always provided a large kettle of sweet rusks for her children to eat between meals, and then mourned over their delicate appetites when they came to the table. She could not tell how they lived, but she never seemed to think that a large substantial home-made rusk had been eaten by each just before the meal. With my children I have made it a rule to give them, when hungry between meals, food that was not sweet. Be very careful to know what your children read; sensational, exciting stories affect health as well as sober common sense and judgment. Indolence and sensuality are often promoted by such unhealthy reading. One of the most instructive, useful, yet fascinating books for boys and girls also, is "The Young Marooners on the Florida Coast, or Robert and Harold," which is in fact the Robinson Crusoe of America.

See that your child's clothing is abundantly loose; children grow so fast that a garment

not long made may become uncomfortably tight. Do not dress them in flounces, tucks and embroidery for summer, spring and fall; and to wear at seaside resorts a suit of blue flannel trimmed with durable star alpaca-braid, is very pretty and serviceable. The trimming may be arranged in a variety of ways, and such suits or dresses are loose, comfortable and healthful. If you go in the woods or on a pic-nic, it is a good plan to have a common dress for children taken along, in which they can romp and run at will. A child is miserable if still, and develops best with what they love—perpetual motion.

J. B. M. B.

Report of Judges.—Reapers and Mowers,—Centennial Exhibition.

Of the ordinarily constructed machines, the Peerless, made by C. Russell & Co., of Canton, Ohio, and the Champion machines, made by the Champion Machine Company, of Springfield, Ohio, by Warder, Mitchell & Co., of Springfield, Ohio, and by Whiteley, Fassler & Kelley, of Springfield, O., made the cleanest and best work, and appear well-made, serviceable machines. We also approve of the mower shown by the Rochester Agricultural Works, of Rochester, New York, and by James L. Spink & Co., of Minneapolis, Minnesota, its manufacturers, as simple in construction and light in draft. The heavier draft machines—those of the Johnston Harvester Company, of Brockport, New York, the different forms of the Buckeye machine, shown by Adriance, Platt & Co., of New York, N. Y., and by Aultman, Miller & Co., of Akron, Ohio, made a creditable performance, and the same may be said of McCormick's mower. The W. A. Wood, of Hoosac Falls, New York, cut well when the crop was upright; but owing to its not having a flexible cutter-bar, was useless in the rolled grass.

The table-rake reapers were exhibited by Mr. W. A. Wood, of Hoosac Falls, New York, and C. Aultman & Co., of Canton, Ohio. The first machine, in which the rake is attached to a chain-gear which travels around the outside of a nearly square platform, was not a success, as the grain was laid too much to the rear of the machine, and not clear of the horses' track during the next journey. Messrs. Aultman's apparatus, in which the jointed rake is driven by universal joint and bevel-gearing, being directed in its orbit by a common table screened from the grain by a shield, made excellent work, and offers some advantages over ordinary sweep-rakes, especially in the superior form of the gavel for binding. The rake can be worked continuously or stopped at any portion of its course by leverage from the driver's foot, thereby allowing of regulating the size of the gavels according to the crop. The disadvantages of the table-rake appear to be that as the rake compresses the grain at the corner of the table there would be some risk of the grain shedding when over-ripe, while the closeness of the gavel interferes with the drying influence of sun and wind when the corn is cut green. The practical farmer alone can decide in which direction the balance lies according to his requirements.

Strawberry Short-Cake.

For several years past I have wished to give my method of making strawberry short-cake to the Home Department of *The Farmer*, and each year have forgotten it, until I was in the act of making one myself, and then of course it was too late to be useful for that year, and if sent then it would probably fail to make an impression that would last until the following strawberry season. This I trust will be just in time to catch the attention to some practical purpose. I hope the sickening mixtures of sweet-cake and custards interspersed with strawberries, and miscalled "strawberry short-cake," will not have brought the real article into so great disfavor as to prevent at least one trial of the simple directions below:

Make a *light rich* short-cake of almost any kind. I prefer the soda-biscuit recipe, with a little more shortening added. Roll the dough rather thinner than for biscuits, and shape it to fit your baking-pans. Have ready a quantity of strawberries, the more the better; two quarts will make it very good, with the quantity of dough made from two quarts of flour. Mash the strawberries, make them *quite* sweet, (of course with white sugar;) add to this a pint of rich cream.

When the pans with short-cake are taken from the oven thoroughly done, split them open; butter each half liberally with *good butter*; lay one upon a large dish; spread the mashed strawberries thickly over it; lay the other half on the top of this, buttered sides up of both. Again spread thickly with the mashed fruit. You may, by having the baking pans of uniform size, make it with as many layers as you like. I prefer only two or three, as the pieces can thus be kept in better shape when divided. A little pure cream added after dishing out is an improvement, but not at all necessary. Eat it while hot,

CERES.

Centennial Exhibition—Report of Judges.

Another departure from the ordinary form is seen in the Haymaker mower, (now the New Champion,) in which the motion is transmitted from the traveling-wheels to the knife by a single pair of bevel-wheels, thereby effecting a saving of power by a considerable reduction of friction. Though simple enough in reality, the mechanism by which this is effected is somewhat difficult to describe. We find a small bevel-wheel, with forty-six teeth, fixed to the axle, and a similar wheel in all respects, only having two more teeth, gearing into it, but being hung in a gimbal-joint like a ship's compass, it does not revolve, but makes a succession of rapid serpentine vibrations around the face of the other wheel, and an arm extended from the vibrating disk down to the knife gives it the required reciprocating motion. The motion is remarkably pretty; and as six or eight teeth are always engaged at once, instead of two or three, as in ordinary gearing, the wear is more evenly distributed. There is only one rotating bearing beside the axle, viz., that of a simple fly-wheel, which tends to give regularity and steadiness of motion. The only point

that is likely to wear is the gimbal-joint, and this we may safely put against the boxes and bearings of ordinary machines. It is noiseless in running, and the work done on upstanding grass is excellent. Because there was no flexible cutting-bar—which could be easily applied—the rolled grass was not cut well. [The arrangement now in use overcomes this defect entirely.] The knife has plenty of speed, viz: 23 revolutions, or 46 cuts for each revolution of the wheel. We venture to express our opinion highly favorable to the merits of this machine, which, it will be seen, stood well for lightness of draft. The simplicity of the machine, and consequent lightness, must not be overlooked in points of merit.

The following items we copy from the *Maine Farmer*:

Mr. James S. Cushing, a farmer living in the town of Freeport, has a sheep one year old which dropped a lamb March 20. She had no milk at the time, and Mr. Cushing fed it until March 30, when to his great surprise she dropped another. The first one she did not take much notice of; but now she takes good care of both, and they are doing finely.

Samuel Ketchum, of Blaine, Aroostook Co., has a very remarkable sheep. About the middle of February she dropped a good healthy lamb, and when this lamb was one month old she gave birth to two more, all of which are now alive and doing well. She owns all three of the lambs as if they were all dropped at once.

PENNSYLVANIA STATE FAIR.—The Pennsylvania Agricultural Society is already arranging for a grand State fair and sheep show next September. The success of the last exhibition was so great that the society has decided to offer premiums amounting altogether to \$40,000. Of this amount prizes of \$6,000 have been set aside for sheep, \$7,000 for horses, \$8,500 for cattle, \$3,000 for swine, \$1,000 for poultry, \$1,500 for dairy products, and the balance, \$13,000, for machinery, seeds, fruits and other products.

Centennial Exhibition.

Otis Brothers & Co., New York, N. Y.

(HAYMAKER) MOWING MACHINE [NEW CHAMPION.]

Report.—Commended for a novel and beautiful motion, by which the power is conveyed from the traveling wheels to the knife by means of one pair of bevel wheels only. This is effected by means of a gimbal joint carrying the driven wheel instead of revolving, to make a succession of serpentine vibrations around the face of the driver, and an arm extended from this vibrating disk gives the necessary movement to the knife. In this peculiar motion, which is partly dependent upon the fact that the gears are differential, the driver having forty-one teeth and the gimbal wheel forty-eight, at least eight teeth are always engaged at once, thereby distributing the strain more evenly than in ordinary gearing.

Warder, Mitchell & Co., Springfield, Ohio.

MOWING MACHINES, (CHAMPION PATTERN.)

Report.—Commended for strong, durable construction on similar patterns as the Champion Machine Company; rear cut; the knife-bar on a parallel drag bar can be set to any angle while at work.

The American Farmer.

PUBLISHED ON THE FIRST OF EVERY MONTH

By SAML. SANDS & SON,

At 128 W. Baltimore Street, (sign of the Golden
Plow,) Baltimore, Md.

WM. B. SANDS, Proprietor.

SAML. SANDS, {
WM. B. SANDS, { Editors and Publishers.

SUBSCRIPTION, \$1.50 a year, in advance. Three copies will be sent for \$4, and any person sending five names and \$5 will receive an extra copy free.

ADVERTISING RATES.

	1 Mo.	3 Mo.	6 Mo.	1 Year.
One Square, 10 lines.....	\$ 1.50	\$ 4.00	\$ 7.00	\$ 12.00
Quarter Page.....	6.00	15.00	22.50	35.00
Half Page.....	12.00	25.00	40.00	70.00
One Page.....	20.00	45.00	75.00	120.00

Cover Pages subject to special contract.
Transient Advertisements payable in advance—all others quarterly.

Advertisements should reach us by the 27th of the month, to secure insertion in the succeeding issue.

BALTIMORE, MAY 1, 1880.

Bills.

Such of our subscribers as are in arrears will find that, as is our custom, we have inclosed their bills in this No., attention to which will be duly appreciated by us. The individual amounts are small, but the aggregate makes a considerable sum.

Personal—10th April, 1880.

This date reminds us that the limit of life allotted to man has been reached by the writer: on the 10th April we completed our four-score years; and although the palmist has said that three-score and ten is the time allotted to the human family, yet if by reason of strength we shall attain to four-score years our days are full of trouble; and elsewhere we are told that "a grasshopper becomes a burden," yet we are truly thankful that Providence has been kind towards us to bless us all our days, and that whilst in the "sear and yellow leaf" we have still continued to us a good measure of health and strength and freedom from every pain or ache to which weak mortals are subject, and in reality feel but little change for the worse from what we experienced twenty years ago. With an elastic step we foot our way—a distance of nearly two miles—from our dwelling to our office every morning without inconvenience; our cranium displays but few grey hairs; our sight is excel-

lent still, and for most reading we have no need of glasses except when a badly slurred sheet is before us, although as a preservative we generally use them; our appetite is good, our spirits generally buoyant, whilst our sleep is sound and refreshing. It has been seldom a necessity, during a long life, to resort to medicine, so little have we been afflicted with sickness of any kind. Favored as we have thus been with all the earthly blessings which are vouchsafed to man, we are grateful that, with the knowledge of the Truth to which we have attained, we have a living hope that, when the Master shall appear again to take to himself his people, we shall be ready for his appearance, and whether awake or in the grave, when the trump shall sound, that we shall be ready for his advent and be found among those to whom the promise of eternal life has been given.

We had intended in commencing this "personal" to have accompanied it with a brief account or history of our connexion with the agricultural literature of the country, which we prepared some year or two ago; but are warned that the space required is already overcharged. Some other occasion will probably offer when it may see the light, and may interest many of our readers who have been traveling along with us in the journey of life, and taken an interest in the contents of the pages of our old journal, with which we have been connected, with some intermission, for more than a common life-time.

S. S.

Tuckahoe or "Indian Bread."

We have a circular letter from Prof. J. Howard Gore, Columbian University, Washington, D. C., who would be glad to receive from our readers any information they may have regarding this fungus, which is found in various parts of the United States, especially along the Atlantic coast, generally after clearing old fields of the stumps of the primitive forests. Its usual shape is globular or oblong, with rough protuberances on the surface; its internal surface is white, solid and farinaceous, having no taste or smell when dry. The professor desires to know as to the size and abundance of specimens, and the nature of the soil in localities where found; whether they were growing near roots, and if so, of what plants; whether they were attached to stocks of their own, &c. Also as to local traditions of former uses, &c.

A number of notices of books received and other matter prepared for this issue, crowded out, will appear next month.

New Importation of Percheron Horses.

Mr. Wm. T. Walters, whose farm near this city is not more marked for its attractive situation and tasteful embellishments than for its fine stock and the practical methods by which it is carried on, as a country place affording pleasure and recreation to its owner, a man of extensive business cares, has recently brought over three stallions and four mares of the Percheron race, which not only equal any early importations, but which, as is said by their shipper, could not at the present moment be duplicated in France.

Mr. Walters, during a residence in France a number of years ago, became much interested in these horses, whose introduction into this country would, as he foresaw, supply a deficiency in the way of draft horses which was then and likely to continue strongly felt. With exceptional facilities for the selection, and after a personal journey on foot through Perche, where he saw every horse standing in the district, he purchased a stallion and two mares and sent them to his farm, adding afterwards several others, which, with their increase, were sold from time to time, as has been noted in our pages, and spread over a wide region of country, the horses wherever stood having gained general favor for the size, vigor, docility and action of their get as farm or general utility horses. Of these imported animals only one, *Alene*, remains, now 17 years old, quite white, but as sound as ever, and with legs and feet which show no failing; and of the younger stock, two horse colts of one and two years respectively, and one filly.

Desirous of extending a knowledge of the merits of this race in this country, Mr. Walters translated and had published, in New York a little volume entitled *The Percheron Horse*, by M. Huys, the first authority in France on these horses, and it may be justly claimed as largely a result of the information therein contained that since its appearance over 300 stallions have been brought into the United States.

The original stock and all their produce having been practically exhausted, it was determined to get out a new lot, which arrived at the farm early last month in charge of the foreman, Mr. Stricker, who was sent over for them, having had a quick passage, and reaching their destination in good condition and without injury. In company with a number of gentlemen interested, we had the opportunity of witnessing these horses one afternoon last month just before they were separated.

VICTOR, a magnificent grey horse, stands quite 17 hands high, weighing after his voyage 1,475 pounds, with an expressive face, tremendous neck and chest, clean muscular legs, broad quarters, and great freedom of action.

VULCAN, a steel grey, not so large as the first, was noted by all on the ground as the most stylish Percheron they had ever seen; his arched neck, bright eyes, satin-like skin, fine hair and quick movements, all showing the influence of the Arab blood, to which these horses go back.

DUKE is of lighter color and stouter build than the others, with a neck short, rounded and of great power, capacious chest, and noticeable for his amiable and docile expression.

The horses are all young, 5 years, and will, as they become acclimated, develop and fill up; the seasoning process, after the change of climate, water, feed, &c., requiring generally a year's time.

The four mares, three dark dappled and one light grey, are appropriate mates for the horses. One of them is very large, weighing nearly 1,500 pounds; the others are not so heavy. All of them are well formed, with perfect heads handsomely carried, round capacious bodies, good feet and legs, well fitted to be dams of an useful and appreciated race in their new home.

On our remarking to Mr. Walters that the type of these animals seemed different from the others he had, and from all we had seen, in being finer, of more spirited action and stylish carriage, he replied that this was due to the fact that in this importation he had endeavored to get animals as near as possible to the Arab blood, and these characteristics showed forth as its concomitants, as noted in the case of Vulcan. We have since been furnished with an extract from a letter of the person by whom they were chosen, who is an official under the French Government, charged with the duty of selecting horses for the army. He writes:

"All of these horses, stallions and mares, come from breeders who have always kept their stock wholly clear from the contamination of the Boulonnais and Flamand horses, desiring to preserve the race pure instead of crossing it with the miserable 'lymphatic' horses of the North.

"Every year I see Americans buying horses in Perche. They seem to look only to size and volume, seeing nothing in the Percheron but a *walking motor*. But the Percheron is the more pure the nearer he approaches the Arab. The true horse should have a fine skin, short hair and silky mane and tail.

"Those horses which vary from this type are Boulonnais and Flamand colts brought into

Perche and sold as Percherons. Hence the deterioration of the race and the difficulty of finding it pure."

One of the horses and one mare have already been disposed of to Governor Camden, of West Virginia, who is so much pleased with two mares bought about a year ago from Mr. Walters that he desires to increase his stock. Duke goes to Howard county, where, and in Montgomery, the Percheron cross is highly esteemed and in much demand. Victor and the mares remain on the farm, where they are worth a visit from any lover of horses.

Mr. Walters, who has given much attention to the Percherons, is of the belief that horses bred in this country from imported sires and dams are superior in every respect to their parents. It will, of course, be long before such abound, since few mares comparatively have been or will be imported; but the characteristics of the breed are so well marked and so faithfully transmitted, that the influence of these introductions ought to be widely felt, and the thanks of the community are due the public-spirited gentleman, who, without any desire of gain for himself, has been at the trouble of introducing them to the country and to our farming districts.

Mowers and Reapers.

As all the work and patience of the year are only steps to the final result, which is the harvest, the crowning of the farmer's labor, it is practical wisdom for him to prepare in time for the securing of what has cost so much thought and care and toil. The world has progressed too far to admit of the use any longer of the antiquated tools and machinery of past generations. Processes have been improved, crops enlarged by better husbandry; and the farmer who has sought by the introduction of better breeds of farm animals, the selection of improved seeds, the adaptation of labor-saving devices, to produce articles which he is able to sell in the market at a greater profit, if sometimes even at a less price than formerly, finds it of the first importance, now when the fruition of his hopes is at hand, to select such machines, and only such, for gathering his crops made, that he may count upon with a full assurance of their being as near perfection as mechanical skill has yet brought them. He must know and feel that in the hour of his dependence, when the slightest break means delay, and delay loss, sometimes irreparable, they will not only do all claimed as to performance, but that the fibre of their mate-

rial and the thoroughness of their workmanship, will justify such reliance.

We feel entirely at liberty to say the "Champion" machines "fill this bill." Our own experience in their use under prolonged and trying strains and observation through many harvests, justify almost any encomiums which may be passed upon their durability, effective operation, and, what is of equal importance, slight cost of repairs, fully bearing out the claim that during the average life-time of a first class machine, the difference in the cost of repairs will counter-balance the savings made on low-priced ones, saying nothing of the time, wages and crops lost during the stoppages.

Elsewhere will be found some extracts, exact copies of the official publication, from the reports of the judges of the Centennial Exhibition at Philadelphia, in 1876, which are commended to the attention of our readers. The field trials then made have probably never been surpassed as a thorough and exhaustive test of the relative merits of the competing machines, the juries being composed of trained experts of the highest skill and character. They differed in this from many local contests where the means and experience are not available for impartial and conclusive determinations of the capacity of such machines, and where too often prejudice or interest have too great influence.

This season, as we are informed, in consequence of the rise in the price of metal and the wages of labor, an attempt will be made to put upon the market and close out a large stock of machines out of date and of inferior capacity, and which, but for the activity existing in such products, would probably otherwise have found their way to the scrap-pile as old iron. True economy is not manifested in buying these, even at low prices, but in securing the best to be had.

The manufacturers of the Champion machines say they carried none over from last season. Consequently their stock is entirely new, and the cost of the later improvements, added since the centennial year, when their merits were noted by the judges in their awards, with the advance in freights, fully equals the enhancement in prices over 1879, leaving out of sight the increased cost of material and labor.

In the demand which is springing up, and which, in view of the unusually wide area in grain, will doubtless be greater than in any preceding season, we commend to the farmers who wish to cut their crops in the shortest time and the best manner, with least risk of delays, the Champion Mowers and Reapers.

Pleuro-Pneumonia in Cattle.

The Agricultural Society of Baltimore County deserves all the credit which attaches to the securing of legislation against the spread and for the extirpation of this pest. Not only was there general apathy, but much skepticism as to the necessity of such a measure, although it was well known to many who had taken the trouble to investigate the subject that pleuro-pneumonia existed at many points in the State, and had so existed for a number of years. The absence of any laws on our statute-books made any agitation of the subject unwise during the recess of the Legislature as likely only to produce distrust and uneasiness, but it would have been criminal negligence for a State like ours to suffer the disease to go unchecked after the opportunity of procuring a law for its eradication.

If only as a measure of precaution action was necessary, and the wisdom and timeliness of the act passed has not only already been demonstrated by the report of Dr. Lyman, the Veterinary Surgeon of the United States Department of Agriculture, extracts from which are given on another page, but the Governor has already been called upon to act in the case of the herd of Mr. E. W. Gallup, of Harford, where the disease has prevailed since September of last year, and where, under authority of the Governor, some twenty head of cattle were destroyed, including nine or ten which were well, though in contact with the infected animals; and the wisdom of the slaughter of which, we will add, we are inclined to question, believing that a quarantine might have answered the end sought—though we are not fully advised as to the details of the matter.

When the Agricultural Society determined to make an effort for securing the desired legislation, it appealed to the Hon. George Hawkins Williams for his assistance, and it is due to that gentleman that it should be placed upon record that it is mainly to his exertions that speedy action was had. Although it was not known to the managers, Mr. Williams had suffered in a herd of cattle owned by him, in Harford county, from the disease, and so stated in his seat in the Senate.

By the new law, all the authority is vested in the hands of the Governor, but what action he will take we are not yet advised. At his request, Dr. C. W. Chancellor, Secretary of the State Board of Health, has visited New York, New Jersey and Pennsylvania, to inquire into the working of the laws therein, and has submitted a report to the Governor.

The Agricultural College.

The House, by a decisive vote, struck out of the appropriation bills the items for this institution, and the Senate, by one almost as emphatic, rejected amendments, offered by Mr. Gorman, looking to their reinsertion. Finally, after a strong appeal from Mr. G., who gave assurance that the institution, when under State control, would be converted into an experiment station, the appropriation for 1881 was restored, it being understood there were debts due by the College, notwithstanding that recently, as for three years past, the "payment of the debt" has been the main or only apology for its shortcomings. The appropriation for 1882 was reduced to \$5, (five dollars,) and an amendment adopted, adding the words "*and no more.*"


The College enjoys the unenviable distinction of being the only public institution in the State unfavorably reported upon by the committees of the Legislature. The Joint Committee of the Senate and House on Public Institutions, accompanied by members of the Committee on Agriculture and others, visited the College, and seeing how inefficiently it was being conducted, subsequently submitted an unanimous report that they did not believe the State benefited by appropriations to it, and recommending the repeal of the laws giving it State aid and the income from the United States land scrip, and that the Board of Public Works be authorized to sell the State's interest in the property.


The charter was changed so that the private stockholders now have five instead of seven members of the Board of Trustees, and the State is represented by the Governor, President of the Senate, Speaker of the House of Delegates, Comptroller, Treasurer and Attorney General, the United States Commissioner of Agriculture being made also an *ex officio* member. This arrangement is a cumbersome one, and, as a measure of reform, does not seem to promise satisfactorily. It is intimated that changes are likely to be made, at no distant date, in the management which has brought the College into discredit.

At the meeting of the stockholders, April 14, the two trustees dropped were Major Lee, of Prince George's, and Col. Earle, of Queen Anne's. The first has been generally regarded as the efficient supporter of the administrations of Gen. Jones and Captain Parker—the results of which have been plainly developed to the people and Legislature of the State. Col. Earle has also been active in the same direction, though we believe he was actuated by no personal considerations, but only a desire to advance the College of which he was one of the founders.

The Legislature and Agriculture.

The tobacco-inspection law remains unchanged, all the proposed reforms having failed. No change was made in the system and fees for weighing hay and straw; but the compulsory weighing of live stock is abolished, and the State Scales are to be leased by the Board of Public Works to the highest bidder. The bill to suppress pleuro-pneumonia became a law, as noted elsewhere.

 We call attention to the handsomely displayed advertisements of Messrs. J. J. Turner & Co., who offer to Tobacco Planters and Corn Growers, Excelsior, Ammoniated Bone Super-Phosphate and Pure Dissolved Bones, at the old-established stand, 42 Pratt street, where the business has been carried on for half a century or more.

 Mr. H. W. Matthews, manager for C. Aultman & Co., in Baltimore, has for sale the Buckeye Self-Binder, and a full line of Buckeye Mowers and Reapers, the character of which is thoroughly established; also the celebrated Canton, O., Monitor Farm Engines, with Traction attachment, the Sweepstakes Thresher and Separator, and the Tiger and Favorite Horse-Rakes, manufactured by J. W. Stoddard & Co., to all of which we call the notice of our readers.

The Remington Improved Mower, for which Messrs. A. & A. G. Alford, 23 S. Calvert St., are the agents, has several features peculiar to itself which are worthy of inspection. The frame is entirely of iron; the shafting firmly held by the frame, so that it must work in line; there is little weight on the horse's neck, and the draft is light. The Ilion Horse-rake, controlled by the same house, is one of the best made.

Messrs. J. C. Durborow & Co. make a specialty of the Springfield Pitts Separator, a machine which has won a good name for itself, and which has proved popular in many neighborhoods in this State, especially in Kent and Howard counties. They are agents also for the Thomas Wheel Horse Rakes, South Bend Chilled Plows, and other well-known implements.

THE NEW SHEEP DIP.—Little's Chemical Fluid, from testimonials submitted to us, and such as have appeared in our own pages, its excellent qualities and cheapness, seems likely to supersede all other Dips in use at present.

Griffith & Turner,

whose advertisement will be found in our advertising pages, keep a very general assortment of all kinds of Agricultural Implements and Machinery and Seeds; and, as the season for supplies is at hand, we would advise farmers to give them a call and examine their stock. Their specialties are Mowers and Reapers of several celebrated inventors, Hay Loaders, Grain Drills, Threshers and Separators and Cultivators, and the celebrated Oliver Chilled Plow, and the Thomas Smoothing Harrow. The Patent Steel Barbed Fence is also to be found at their establishment, as well as every variety of approved Fertilizers. This enterprising house is worthy of the confidence and support of those for whom they cater, and descriptive catalogues will be sent to any one wishing articles in their line on sending them a postal card.

Peanut Cultivation.

Our inquirer about this crop is referred, for minute and valuable directions, to the paper which appeared in the *American Farmer* of February, 1878, by the late Dr. Briggs, of Nansemond Co., Va. The following condensed statement seems to give the processes of an experienced grower:

Having selected the ground, it is to be plowed with a one-horse plow in March or April to the depth not exceeding four or five inches. About the 10th to the 20th May is the time for planting. If the land is thin and needs manuring, open furrows three feet apart, and strew in a hundred to a hundred and twenty-five pounds of Peruvian guano, or from a hundred and fifty to two hundred pounds of superphosphate of lime. The former is generally used, because of the greater certainty of getting a pure article, but nothing can be better than the latter when well prepared. The furrow is then to be ridged over and the whole surface thrown into three-foot beds, which should be reduced to within two or three inches of the level of the field. Then mark off the rows, and at distances of eighteen inches plant two seeds, covering them an inch to an inch and a half deep—not more.

In ten days or two weeks, according to the weather, the young plants begin to come up. As it is very important to get a good start, the missing hills should be replanted at the earliest moment.

As soon as the grass makes its appearance, give a light plowing, throwing the earth from the vines and following with the hoe, thoroughly removing all the grass from the row. Plow again as soon as the grass reappears, this time using a double-shovel or cultivator, and the hoe as before directed. If the season should prove to be very wet, a third working may be necessary, making use of the hoe and cultivator again.

Next comes the time of laying-by, the vines having extended half way across the space between the rows. This is done by running a

mold-board in the middle between the rows, and drawing the earth up to the rows with the hoe, care being taken not to cover the vines, and to disturb their position as little as possible, as the fruit will now be forming. It will be necessary to guard against making the bed too high.

PRESERVING GREEN CORN FODDER.—Mr. Chas. K. Harrison, a dairy farmer of Baltimore county, who lost his grass and grain crops last summer by hail, informs us that he planted enough fodder corn which he put up in pits (ensilage) to feed his cattle from the 5th of December to the 5th of May. This year he will preserve on his farm in Farquier, Va., over 800 tons of fodder, he having arranged to increase the capacity of his pits, or silos.

During the month of September, 1879, there were received at Liverpool from America 1,208 pigs.

CENTENNIAL AWARDS.

Whiteley, Fessler & Kelley, Springfield, O.

CHAMPION SWEEP RAKE REAPER, (SIX-FEET CUT.)

Report.—Commended as a well-made, serviceable machine, of the Champion pattern, with rake head set very low, which insures the grain being laid straight on the table. The form of cam gear allows of the collectors rising somewhat obliquely, thereby inclining the grain in the right direction and allowing of successful operation when the crop is laid. The cam gear (Dodge's patent) is of malleable iron, driven by universal telescope joint from main axle, which allows of the elevation or depression of the table without increase of strain; knife gear outside the travelling wheel; main frame in one piece of wrought iron, three-quarters by two and a half inches; platform connected with main frame by strong brace with two bearings securing liberty and strength; gavels uniform and well laid; machine commendable for strength and simplicity.

The Champion Machine Co., Springfield, O.

COMBINED REAPER AND MOWER, (AS A MOWER.)

Report.—Commended for strong, durable construction. The frame is of wrought iron bolted together. The height of cut, regulated by good leverage and pitch of knife-bar, can be altered while at work. The advantage of this adaptability was evident when the machine followed the roller and cut the laid grass extremely close and even. The knife is driven from both wheels, by means of ratchet wheels on the spur pinion axle. The main axle is stationary and of cold rolled iron. The wheel axle has short bearings. The crank-shaft is of cast steel, has a bearing the whole length, with an oil chamber in the centre. The nut of pitman holder is furnished with a ratchet and spring catch. The pitman has a ball-and-socket attachment. The bearings are large, and the wear is taken up by a screw. The finger guards are forged solid, the slot being cut out by a circular saw. No steel plates are used, but the guards are sharpened and case-hardened. The knives are made from four to six feet in length. The knife-bar is fixed fifteen inches behind the axle. The knife makes ninety-eight vibrations for each revolution of driving wheels, which are thirty-two inches in diameter.

Champion Machine Co., Springfield, Ohio.

COMBINED SELF-RAKING REAPER, (AS A REAPER.)

Report.—Commended as a strong, well-built machine, capable of doing good work in both capacities. As a sweep-rake, the gavels were laid with regularity, and the butts of the sheaves well exposed to wind and sun. This is due partly to the table being slightly turned up at the edge. The cam-table and switch-gear are horizontal, automatic, or controllable as desired, being a modification of Johnstone's patent. The platform and knife-bar can be lowered, raised, or tilted by easy adjustment.

Baltimore Markets—May 1.

Breadstuffs. *Flour.*—The demand for Flour continues quite active, and we write the market steady and firm, with rather a hardening tendency. We quote as follows, viz: Howard Street Super \$3.25@4.00; do. do.

Extra \$4.25@5; do. do. Family \$5.37@6.25; Western Super \$3.75@4; do. Extra \$4.25@5; do. Rio brands Extra \$6.25; Spring Wheat Family \$5.35@6.35; Minnesota Patent \$6.50@7.50; Patented Family \$7.10; do. Extra \$6.90; Chesapeake Extra \$6.70; Orange Grove \$6.50; Pine \$5.50@6.25; Rye Flour \$4.25@4.50; Corn Meal, City Mills, 7 bbl., \$2.50@2.60; do. do., City Mills, 7 100 lbs., \$1.15@1.20; do. do. Western do. \$1.05@1.10; Western Corn Chop 95c.@\$1.

Cotton.—We report the market steady and firm for spots, and a fraction higher for futures, but it is very quiet here. We quote: Middling 11½@11½ cts.; Low Middling 11¼@11¼ cts.; Strict Good Ordinary 11¼ cts.; Good Ordinary 10¾ cts.

Tobacco.—Maryland has been in active demand from shippers the past week. Desirable grades found prompt sale at firm prices. Ohio, Kentucky and Virginia quiet and held firm. We quote: Maryland, inferior and frosted, \$2.50@3; do. sound common, \$3.50; do. good do., \$4@5; do. middling, \$4@5; do. good to fine red, \$8.50@10; do. fancy, \$11@15; do. ground leaves, new, \$2.50@3; Virginia, common and good lugs, \$3@5 50; do. common to medium leaf, \$6@8; do. fair to good leaf \$8 @10; do. selections, \$12@16; do. stems, common to fine, \$1.50@2.

Live Stock.—*Beef Cattle.*—The market this week was somewhat firmer and more active than last week. We quote at \$2.50@2.50 100 lbs. Prices this week range as follows: Best Beefes \$5.75@5.50; first quality \$4@5; medium or good fair quality \$3@4; ordinary thin Steers, Oxen and Cows \$2.50@3; extreme range of prices \$2.50@5.50; most sales were from (7 100 lbs.) \$4.75 @5.75. *Milk Cows.*—There is a fair demand for good Cows. We quote at \$3@45 7 head as to quality. *Swine.*—The supply is generally reported as being fully equal to the demand. The demand is not reported active in any of the yards, dealers finding the trade only moderate. We quote Hough Sows and Stags at 6 cts., and the better grades 6½@7½ cts., with a few extra at 5½ cts. 7 lb. net. *Sheep.*—There is a large increase in the offerings of Sheep and Lambs, and a good demand for the former, while for the latter trade is slow, a number being left over unsold. We quote sheared Sheep at 4½@5 cts., and wool do. at 4¼@7¼ cts. 7 lb., the latter for some very extra, above the bulk of the offerings; Lambs at 6½@9 cts. 7 lb. gross.

Wheat.—Very little business in Southern. Western opened strong at advanced prices, but subsequently fell back and market closed weak. We quote: Southern Fultz \$1.30@1.25; do. long berry \$1.30@1.25; Western No. 3 red spot \$1.25@1.25½; do. do. May \$1.35@1.37½; do. do. do. June \$1.37@1.38½; do. do. do. July \$1.15@1.15½; do. do. do. August \$1.09@1.09½; do. do. do. September \$1.10.

Corn.—No sales of Southern reported. Western was quiet, but steady as to prices. We quote as follows, viz: Southern white 52 cts.; do. yellow 51 cts.; Western steamer spot 45 cts.; do. mixed spot 49 cts.; do. do. May 48 cts.; do. do. July 48 cts.

Oats.—Are scarce and wanted, and we write the market pretty firm. We quote: Western dark mixed 41 cts.; do. light do. 42@43 cts.; Southern 42@43 cts.

Rye.—No arrivals to-day and no sales reported, but we quote as before good to prime at 88@90 cts., the latter being now an extreme quotation.

Mill Feed.—Market quiet and easier. We quote Western and country at \$22, and City held at \$25 7 ton.

Hay and Straw.—The market for Hay continues dull and heavy, with the receipts liberal, but Straw remains steady. We quote as before, viz: Choice Cecil County Timothy \$19@20; fair to prime Maryland and Pennsylvania Timothy \$17@19; mixed Hay \$16@18; Clover Hay \$15@16; Wheat Straw \$9@10; Oat do. \$12.50 @13; Rye do. \$20@21.

Provisions.—We report firm in tone both here and at the West, with the order trade here active. We quote Bulk Meat loose on the spot firm at 4½@4½ cts. for Shoulders, and 6½ cts. for clear-rib Sides. Choice Bulk Shoulders, packed, 4½ cts.; do. L. C. Sides do. 7 cts.; do. C. R. Sides do. 7½ cts.; Bacon Shoulders 5½ cts.; do. C. R. Sides 7½ cts.; do. Hams, sugar-cured, 10½@11½ cts.; do. Shoulders do. 6½ cts.; do. Breasts do. 8½@9½ cts.; Lard, refined, tallow, 8 cts.; do. do. tubs 8½ cts.; Mess Pork, old, 7 bbl., \$11.25; do. do. new do. \$11.75.

Butter.—The demand active and the market firm in tone, particularly for choice fresh stock. We quote as follows, viz: New York State, choice selections, 26 cts.; do. do. do. dairies 24@25 cts.; Western creamery, choice, 27@28 cts.; do. tubs, choice fresh, 23@25 cts.; do. do. good to prime 20@22 cts.; Western Rolls, prime to choice, 22@24 cts.; do. do. fair to good 20@21 cts.; nearby receipts 21@23 cts.

Cheese.—Fine old New York State is very scarce, and commands 15½ cts.; but New Western, of which there is some arriving, sells at 12½@12¾ cts.

Eggs.—Fresh we still quote at 9½@10 cts. ♀ dozen, with the receipts liberal and the market dull and heavy.

Domestic Dried Fruits.—We quote again as follows, viz: Apples, quarters, 6½@6¾ cts.; do. sliced 6½@7¼ cts.; Peaches, unpeeled, 6½@6¾ cts.; do. peeled, common to fair, 7½@8¼ cts.; prime to fancy 10@12 cts.; Blackberries 10 cts.; Whortleberries 8½@9 cts.; Raspberries 25 cts., and pitted Cherries 16½@17 cts. ♀ lb.

Rice.—Carolina we quote as ranging from 6½ to 7¼ cts. for common to prime, with the market quiet under light supplies, but very strong, and Rangoon at 3½@3¾ cts. in bond and 6 cts. duty paid.

Miscellaneous Produce.—Prices are as follows for the articles named below, viz: Apples, Baldwin, ♀ brl., \$4; do. Russett do. \$3.25@3.75; Beans, New York medium, ♀ bus., \$1.40@1.45; Peas, black-eyed, ♀ bus., 70@75 cts.; Peas, Western green, ♀ bus., \$1.80@1.85; Potatoes, common, ♀ bus., 30@40 cts.; do. Sweet, ♀ brl., \$2.50@3; Onions, Bermuda, new, ♀ box, \$2.25@2.50; Beeswax, ♀ lb., 21@22 cts.; Ginseng, ♀ lb., \$1@1.10; Seneca Root, ♀ lb., 45@47 cts.; Virginia Snake, ♀ lb., 20@25 cts.; Wool, unwashed, ♀ lb., 38@40 cts.; do. tub-washed, ♀ lb., 50@55 cts.; Hides, dry country, ♀ lb., 17@18 cts.

Contents of May No.

What we May Learn from Certain Weeds, by Prof. F. P. Dunnington.....	165
Chemical Fertilizers and their Uses, by E. Wenig.....	168
Chemical Fertilizers, by Eastern Shoreman.....	169
Fertilizers Again, by Howard Meeks.....	169
Our French Letter, by F. C.....	170
Farming in Queen Anne's County, by Wm. Henry De Courcy.....	173
Fultz Wheat, by W. E. Manakee.....	173
Pulverized Oyster-shells, by G. F. B. Leighton and Prof. N. B. Webster.....	173
Sorghum for Feed, by W. L. Caldwell.....	174
The Wool Product, by Mr. Hayes.....	174
Pleuro-Pneumonia in Maryland, by Dr. C. P. Lyman.....	176
Grade Jerseys—A Town Converted, by F. D. Curtis.....	177
Milking Cows, by H. E. Alvord.....	178
Hoven in Cattle, by Dr. Lemay, V. S.....	179
Judge Walter's device for Fastening Cattle and Horses.....	180
The Hog for the South.....	181
The Gunpowder Farmers' Club, by H.....	182
Deer Creek Farmers' Club.....	188
Work for the Month, the Corn Crop, Root Crops, Tobacco, Millet and Hungarian, Fodder Corn.....	184, 185
Orchard and Fruit Garden for May.....	185
Poultry Hints for May.....	185
Income from Poultry.....	186
Practical Artificial Incubator.....	186
The Millers' Exhibition at Cincinnati.....	186
The Season—Future of Wine Making in Md., by G.....	187
Pear Blight, by A. Sweeny.....	187
Gardening then and now, by J. W.....	188
Rhododendrons, Ghent Azolear, &c., by Waverly.....	189
Window Plants, by N. F. F.....	189
Vegetable Garden for May, by Jno. Watson.....	189
Lettuce, Asparagus, Kaint for Laws, by W. F. Massey.....	190
New Vegetables, by N. F. F.....	190
Maryland Horticultural Society.....	191
Trials of Mowers and Reapers.....	191, 193

Moral Stimulants, by Ceres.....	192
Philadelphia Letter, by Mrs. Bristol.....	192
Carpet Making made Easy, by Ceres.....	193
Children's Health.....	193
Strawberry Short-Cake, by Ceres.....	194
Editorial, Personal, Tuckahoe.....	195
New Importation of Percheron Horses.....	196
Pleuro-Pneumonia in Cattle.....	198
The Agricultural College.....	198
The Legislature and Agriculture.....	199
Editorial Notices.....	199
Peanut Cultivation.....	199

NO MORE RATS OR MICE!

"They Shall Die and Forever Cease."

A newly-discovered Poison to kill these destructive pests—combined with an attractive medium irresistible to rodents—is incorporated in the PERFECT EXTERMINATOR known as

Bridger's Poisoned Grain

On taking one grain of which the animal is seized instantaneously—in the very act of swallowing—and expires within thirty or forty seconds!

They Die on the Spot,

Not giving them a shadow of a chance of regaining their haunts. You can clear your premises entirely of the hateful vermin with two or three of the layings down of this Poisoned Wheat. One Box is sufficient to kill over a hundred rats!

Now is the time to use it.

Sent by mail Free for ONE DOLLAR.

Address

E. BRIDGER, Toxicologist,

213 Lodge Street, Philadelphia, Pa.

AHEAD OF ALL COMPETITION!

1880.



EIGHT SIZES FOR HAND USE.

Weighing from 22 to 51 lbs.

THREE SIZES FOR HORSE POWER.

The very large increase in our sales last year prove that these Machines fully sustain the awards "AS THE BEST" made to them at the great Centennial "hundred-day trial" in Philadelphia, in 1876, and their complete victory at the Paris Exposition in 1878. We offer for 1880 Machines from entirely new patterns and greatly improved in every respect. Examine our New Lawn Sweepers Hand or Horse size.

GRAHAM, EHLEN & PASSMORE,

Patentees and Manufacturers,

631 Market Street, Philadelphia, Pa.

Send for Descriptive Catalogue with prices.

—LADIES—

WHO DO NOT FIND IT CONVENIENT
TO GO TO PHILADELPHIA
WHENEVER.

DRY GOODS

Are needed in their Families, either for PERSONAL ATTIRE or HOUSEKEEPING NEEDS, should not fail to remember the admirable system so perfectly organized by

STRAWBRIDGE & CLOTHIER

EIGHTH and MARKET Sts.

PHILADELPHIA,

Whereby the most satisfactory shopping can be done in the most economical manner while remaining at home.

The stock of these merchants, which is decidedly the largest in Philadelphia, will be shown to you by full lines of samples from any department, in response to a

Request by Postal Card

And all orders promptly and faithfully executed with guaranteed satisfaction.

When writing for samples, please mention the *American Farmer*.

GOLDEN or GERMAN MILLET, HUNGARIAN GRASS and COMMON MILLET SEED, Golden Dent, Chester County Gourd Seed, White Flint and Early Yellow Canada Seed Corn, Sugar Corn from the Connecticut Valley, Cabbage, Tomato and Sweet Potato Plants; Garden, Field and Glower Seeds, unsurpassed in quality, at low prices.

C. B. ROGERS, 133 Market St., Phila., Pa.

Prompt attention to orders by mail.

ESTABLISHED 1848.

HORNER'S CONCENTRATED SUPER-PHOSPHATE FOR ALL CROPS.

It is made of the best and most concentrated materials, possesses all the virtues of PERUVIAN GUANO and BONE-DUST combined, and is well adapted to Wheat, Corn, Oats, &c., producing abundant crops where all others fail. Having a large percentage of Soluble and Precipitated Phosphoric Acid and Ammonia, it is without doubt the richest Commercial Fertilizer in the country.

HORNER'S BONE-DUST

Made only of Slaughter-house Bones, contains a larger percentage of AMMONIA and BONE PHOSPHATE LIME than any other brand in the market.

WE OFFER

One Thousand Dollars!

For the Detection of any Impurity in our Manufacture of Bone.

We do not steam or bake our Bones, or otherwise treat them so as to destroy the animal matter, which is rich in ammonia.

The Best Article in the Market
HORNER'S

Super-Phosphate of Lime

—OR—

DISSOLVED BONE,

MADE OF PURE SLAUGHTER-HOUSE BONES

It is richer in Soluble Phosphoric Acid and Ammonia than any similar article in the market.

CHEMICALS

And other materials for making

Home Fertilizers

Muriate Potash, Kainit,
Sulphate Soda, Plaster,
Peruvian Guano, Oil Vitriol,
Nitrate Soda, Dried Blood,
Dissolved South Carolina,
Dissolved Raw Bone, &c., &c.

A full supply of PURE Materials always on hand and for sale at lowest marks

Write or call before buying elsewhere.

Joshua Horner, Jr., & Co.

OR. BOWLY'S WHARF AND WOOD STREET,
BALTIMORE, MD.

English Portland
German do.
French do.
Roman
Keene's Superfine

CEMENT

Rosendale.
Selenitic.
Wm. Wirt Clarke,
IMPORTER,
61 S. Gay St., BALTIMORE.

TRADE LONDON PURPLE. MARK.

Valuable Insecticide for the extermination of the Colorado Beetle, Cotton Worm and Canker Worm. For prices, circulars and opinions, write to HEMINGWAY'S LONDON PURPLE COMPANY, Limited, 90 Water Street, New York.

Professor C. V. Riley says London Purple can be more effectually sprinkled or sprayed on to the plant than Paris Green, by virtue of its greater fineness.

Professor C. E. Bessey, Professor of Botany, Ames, Iowa, says: "It promises to be a most excellent remedy. It quickly kills both the Larva and Winged Insects."

Professor J. L. Budd, Professor of Agriculture, Ames, Iowa, says: "A single application placed every one of the pests on their backs over the ground, either dead or in a dying condition, in less than six hours."

UNION RAILWAY HORSE POWER.

THRESHERS AND SEPARATORS.

These POWERS are guaranteed to produce more power with less elevation than any other Railway Power. Send for descriptive catalogue.

WM. L. BOYER & BRO.
2,101 Germantown Ave.,
Phila., Pa.

Also manufacturers of the PREMIUM FARM CRIST-MILL.



The Pitts Agricultural Works, Buffalo, N. Y., U. S. A.

ORIGINAL AND ONLY GENUINE BUFFALO PITTS

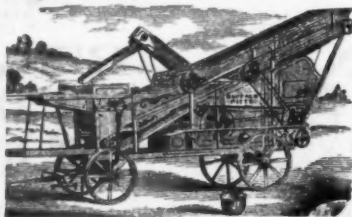
THE STANDARD of Threshing-Machine excellence throughout the Grain-Raising World.

SELDOM EQUALED. Never excelled. **NOTORIOUS** as a fast yet thorough thrasher, perfect cleaner, and entire saver of all kinds and conditions of grain and straw and timothy seeds.

NOTORIOUS as the only machine that is a success in all kinds of threshing and a failure in none.

NOTORIOUS as the best built, most durable, and handiest of the Threshing-Machine Tribe.

STEAM THRESHERS a specialty. Their superiority, it can be said with truth, is acknowledged throughout the world.



CAUTION. Agents as well as Threshermen, be sure you get the genuine Buffalo Pitts, made only at THE PITTS AGRICULTURAL WORKS, Buffalo, N. Y. It is said that other manufacturers are using the name "Buffalo Pitts" on their make of Threshing Machines.

This Unintentional Compliment to the great reputation of the only genuine Buffalo Pitts, by use of its title to sell inferior machines, is flattering to the "Buffalo Pitts." But Agents and Threshermen must not be deceived, nor hold the genuine Buffalo Pitts responsible for the faults of its bastard namesake. For Catalogues and Prices of the genuine Buffalo Pitts, address

THE PITTS AGRICULTURAL WORKS,
Buffalo, N. Y., U. S. A.



The attention of MARKET GARDENERS and others desiring to purchase SEEDS is called to the FACT that the Cabbage and other SEEDS offered by D. LANDRETH & SONS to their customers are grown and saved entirely by themselves, upon their own seed farms, from their own seed stocks, the result of many years' careful and intelligent selection, and are not the result of chance and careless purchases from parties who know nothing of the business of raising seeds. Seed-raising requires years of close observation, careful attention to the one subject, and cannot be acquired in a short time by those whose attention has been engrossed with other pursuits.

The Seed-Growing Establishment of D. LANDRETH & SONS, (now comprising 1,574 acres,) first founded in 1784, and passing to three generations, has been conducted with the view of producing seeds of the very best and purest quality. We are, therefore, justified in assuring our customers that the

Seeds Offered by us Have no Superior in this or any Other Country.

The public generally are invited to call and examine our stock of

SEEDS, IMPLEMENTS and TOOLS,

all of the first quality. No second quality goods for sale. Catalogues free. Prices low.

D. LANDRETH & SONS.

21 and 23 South Sixth St. and No. 4 Arch St.,
PHILADELPHIA, PA.

BEST IN THE WORLD.

COMMON-SENSE CHAIRS AND ROCKERS.

With or without Reading and Writing Table. A lady purchaser writes: "Our only objection to your Common-Sense Rocker is, WE ALL WANT IT."

"I love it, I love it, and who shall dare to chide me for loving the Common-Sense Chair?"

STRONG, EASY and ROOMY. FITS EVERYWHERE. Send stamp for list to

F. A. SINCLAIR,

Mottville, Onondago Co., New York.

Every Chair stamped and WARRANTED PERFECT.

Flowers, Plants, Bulbs, &c.

New Illustrated Catalogue, with Colored Plate for 1880, of Rare and Popular Plants for the

GARDEN, CONSERVATORY, &c.

Now ready. Mailed free to all customers; to others on receipt of four three-cent stamps.

PRACTICAL CAMELLIA CULTURE.

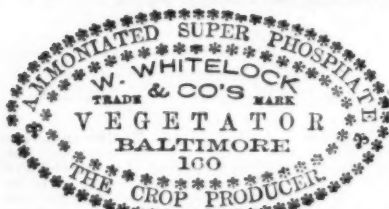
Illustrated with Five Colored Plates and Fifty Wood Engravings. A guide to the successful propagation and culture of the Camellia, by

ROBT. J. HALLIDAY,

Price \$2. Post-paid by mail.

BALTIMORE, MD.

WHITELOCK'S "VEGETATOR!"



This article has for its base
Bones Finely Ground and Thoroughly Dissolved

And is so rich in

FERTILIZING PROPERTIES

As to carry the wheat through the severest winter. While other manures may produce a good crop of straw, there is nothing on the market that will uniformly bring the same quantity of wheat per acre. Apply three-fourths only as much as of other brands. Also for sale.

Peruvian Guano, High-Grade Pure Dissolved Bones, Acid Phosphate, Very Rich.

W. WHITELOCK & CO.

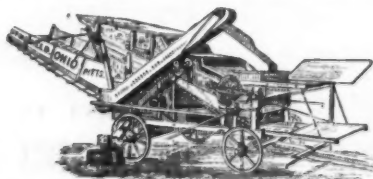
44 South Street, BALTIMORE, MD.

J. C. DURBOROW & CO.

GENERAL AGENTS FOR

The Springfield Pitts Separators & Portable Steam Engines.

35



35

LIGHT ST

LIGHT ST.

The best **Engine and Separator** now in the market. Send for Circular and Price-List. Also, we are Sole Agents for the celebrated **Thomas Wheel Horse Rakes**, the best made and easiest dump Rake in the market; "**King of Lawn**" **Lawn Mowers**, **South Bend Chilled Plows**, **Double Shovel Plows**, **Corn Planters** and **AGRICULTURAL IMPLEMENTS GENERALLY.**

Send for Descriptive Catalogue and Price List to

J. C. DURBOROW & CO.

35 Light Street, Baltimore, Md.



PLYMOUTH ROCKS.

EGGS!

\$2.00 for 12.
3.50 for 26.

THOMAS W. HOOPER,
Lake Roland, Baltimore Co.

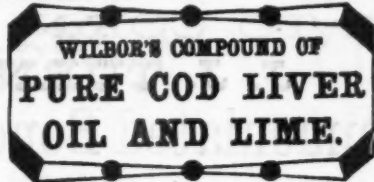
and
27 N. Calvert St., Baltimore, Md.

LARGE MOTHER-OF-PEARL SHELLS

For Garden Ornamentation, of the Halioles variety, white or variegated—in the natural state. Also, suitable for Mounds, Fountains, Aquariums, &c. For sale by the bag or larger quantity. 40 tons for sale by

CHAS. L. OUDESLUYS & SON,

No. 67 EXCHANGE PLACE.



Wilbor's Cod-Liver Oil and Lime.—The great popularity of this safe and efficacious preparation is alone attributable to intrinsic worth. In the cure of Coughs, Colds, Asthma, Bronchitis, Whooping Cough, Scrofulous Humors, and all Consumptive Symptoms, it has no superior, if equal. Let no one neglect the early symptoms of disease, when an agent is at hand which will cure all complaints of the Chest, Lungs, or Throat. Manufactured only by A. B. Wilbor, Chemist, Boston. Sold by all druggists.

COTTON-SEED MEAL.

STANDARD FOOD FOR CATTLE,

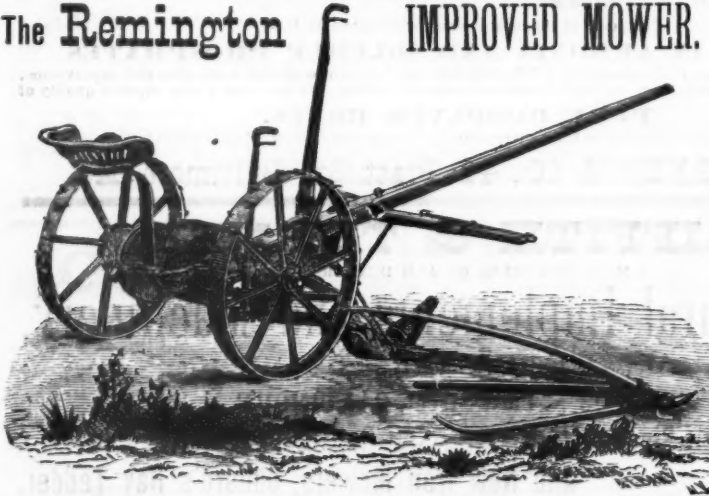
For sale by

A. L. BOGGS & CO.

147 N. Howard Street, Baltimore.

The Remington

IMPROVED MOWER.



Simple, Durable and Effective. Frame is made entirely of Iron, thus preventing warping or springing. Send for Circular.

ALSO,

Union Wheel-Rake, Carbon Plows, &c., &c.

A. & A. G. ALFORD,

23 S. Calvert St., Baltimore.

The New Sheep Dip, Cattle and Dog Wash

NON-POISONOUS, NON-CORROSIVE.

LITTLE'S CHEMICAL FLUID



Mixes perfectly with cold water, and safe to use at all seasons. Is a sure remedy for SCAB, MANGE, TICKS, LICE, WORMS, and all INSECT PESTS. Protects Seed Corn from Crows and Birds. Cost under 3 cents a Sheep. Send 3-cent stamp for Testimonials to

T. W. LAW FORD,

296 East Chase Street, Baltimore, Md.

TO CORN GROWERS.

J. J. TURNER & CO.'S
Ammoniated Bone Super-Phosphate



Composed of the most concentrated materials, it is

RICHER IN AMMONIA AND SOLUBLE PHOSPHATES

Than any other fertilizer sold, except OUR EXCELSIOR, and is made with the same care and supervision; uniform quality guaranteed. Fine and dry, in excellent order for drilling. We have also a very superior quality of

PURE DISSOLVED BONES,

And keep constantly on hand a large supply of high-grade PERUVIAN GUANO.

J. J. TURNER & CO., 42 Pratt St., Baltimore, Md.

GRIFFITH & TURNER,

MANUFACTURERS OF AND DEALERS IN

Agricultural Implements and Machinery,
 Garden and Field Seeds, Fertilizers, &c.

41 and 43 N. Paca Street, BALTIMORE.

McCormick's Self-Binding Harvesters, Self-Raking Reapers,

And New Iron Mowers, Bullard's Hay Tedder,

Hagerstown Horse-Rake, Foust's Hay Loader, Fitzhugh's Hay Unloader, Hagerstown and Farmers

Friend Grain Drill, Empire Thresher and Separator, Malta Shovel Plows,

Walking and Riding Wheel Cultivators,

The Oliver Chilled Plow, Thomas' Smoothing Harrow, Harrows, Cultivators,

DRAGS, &c., &c.

Patent Steel-Barb Fencing—A steel thorn hedge. No other Fencing so cheap or put up so easily or quickly. Never rusts, stains, decays, shrinks, nor warps. Unaffected by fire, wind or flood. A complete barrier to the most unruly stock. Impassable by man or beast. The Farmer's Comfort; The Gardener's Security; The Gentleman's Safeguard.

FERTILIZERS OF STANDARD BRANDS—Griffith & Turner's Animal Bone Phosphate, a high-grade Phosphate prepared from animal bone, has given great satisfaction, and is popular wherever known. **Alkaline Plant-Food** is especially adapted to Corn, Oats, Potatoes and Vegetables, requiring fertilizers rich in Potash. Griffith & Turner's Unsteamed Raw Bone, Slingluff's and Baker's Dissolved Bone, Turner's Excelsior and Phosphate, Holloway's Excelsior and Phosphate, Lister's Phosphate, Whitelock's Vegetator, Peruvian and Orchilla Guano, Plaster, Acid and Chemicals for Compounding Fertilizers.

Reaper Sections and Knives and Repairing of All Kinds at Shortest Notice.

Send for Descriptive Circulars.

GRIFFITH & TURNER,

41 and 43 N. PACA ST., BALTIMORE.

Highest Honors and Awards
TO THE
Buckeye Self-Binder,

BUCKEYE MOWER
AND REAPER,
SWEEPSTAKES
THRESHER,
SEPARATOR AND
CLEANER,



CANTON, O.,
"Monitor"

FARM ENGINE,

(With or without "Traction and Celebrated Link Motion.") Capacity for work, strength, durability and superior finish, paramount to all other considerations.

RANDALL HARROWS,
TIGER and FAVORITE SELF-DUMP and Hand Hay-Rakes,
Manufactured by J. W. STODDARD & CO., Dayton, Ohio.

C. AULTMAN & CO.

BRANCH OFFICE AND WAREHOUSE:

122 SOUTH EUTAW STREET, BALTIMORE, MD.

HUGH W. MATTHEWS, Manager.

J. J. TURNER.

J. D. KELLEY, JR.

J. J. TURNER, JR.

J. J. TURNER & CO.'S

"Excelsior," "Ammoniated Bone Super-Phosphate," "Pure Dissolved Bones."

(ESTABLISHED 1828.)

TO TOBACCO PLANTERS.

1858.



1880.

Forming the most concentrated, universal and durable FERTILIZER ever offered to the farmer,—combining all the stimulating qualities of Peruvian Guano and the ever-durable fertilizing properties of Bones in fine, dry powder, prepared expressly for drilling, and can be applied in any quantity, however small, per acre. It is the opinion of many close-calculating farmers, after TWENTY-TWO YEARS experience in testing it side by side with other popular fertilizers, that an application of 100 pounds of "EXCELSIOR" is equal to 200 pounds of any other fertilizer or guano, and therefore fully 100 per cent. cheaper.

Uniformity of Quality Guaranteed by the Manufacturers.

Farmers can only be secure from inferior imitations by seeing that every bag is BRANDED WITH OUR NAME AND THE ANALYSIS IN RED LETTERS.

J. J. TURNER & CO., 42 W. Pratt St., Baltimore, Md.

TO CAPITALISTS!

Business Property For Sale.

The Property, N. E. Cor. Sharp and German Sts., Baltimore, about 44 feet on Sharp by 117 feet on German St. to a public alley in rear, with outlets to Baltimore and Sharp Sts. thus giving three fronts, and presenting unsurpassed facilities for business in the very heart of the wholesale trade of Baltimore, and of a section in which, during the past year, many of the largest and finest warehouses in the city have been erected, and one of the most valuable and available pieces of property likely soon to come into the market. There is a warehouse on the Sharp St. front of four stories, the upper ones reached separately by wide entrance and stairway. That on German street is two stories, with separate stairs to upper one. The first and second floors extend through the whole extent of the lot, and make fine show-rooms, well-lighted, and suited for any large business. The rear portion might be raised on present foundations and walls, if purchaser preferred thus to improve the property.

The present tenant's lease of 8½ years expires in about a year, and I will sell at any time before its termination, at private sale. Its size, situation, and proximity to Baltimore street, gives this property a great advantage over most others in the vicinity.

THE FARM OF 150 ACRES. at 15-mile stone on York Turnpike road, Baltimore Co. (Md.) is still for sale. It would make an admirable dairy-farm. If not sold before the 1st of January next, will be for rent. See advertisement elsewhere.

Being about to RELINQUISH HOUSEKEEPING, I will also rent **DWELLING HOUSE** 268 Linden Avenue, near Townsend St.; one of the most desirable locations for a city residence. Possession June 1st or July 1st. The furniture will be rented with the house, if desired, or sold. If found suitable, the rent for three-fourths of the year might be taken out in board.

For further particulars of either of above properties, apply to

SAMUEL SANDS,
138 W. Baltimore St., Baltimore,
(American Farmer office.)

LAND PLASTER!

Ground from the **HARD Windsor Rock**, which is 20 per cent. richer in the essential element, **Sulphate of Lime**, than the soft Plaster (which is used by all mills East.) Send for circular.

WM. WIRT CHARKE,

Manufacturers' Agent for American and Foreign Cements and Plaster, 61 N. Gay Street, Baltimore.

A. RIGGS,

Proprietor of Model Herd of

Poland-China Swine

OF THE

BLACK BEAUTY STRAIN.

Illustrated Circular sent upon application to

B. C. PLATT,

Business Manager,
Suffield, Conn.

Fruit and Ornamental

Large Stock. Low Rates.

Standard Pear Trees a
Specialty.

Send Stamp for Trade List.

E. MOODY & SONS, Lockport, N. Y.

NIAGARA NURSERIES.

Established 1839.

FOR SALE.

Red Short-Horn Cow "MARCHIONESS," calved in 1871, got by Duke of Muirkirk, 7992; dam, Buttercup, by Alpha. See Herd Book. Fine Milker. Fresh Calved. Price \$75.

Stud Horse "VICTOR," iron gray, 7 years old, 17 hands high, by Rashleigh, his dam Salttram.

"TELEGRAPH," now in service in Fauquier, Va., to be sold at end of his season, cheap.

For particulars apply to
C. T. HAYES, Warrenton, Va.

J. M. LAROQUE'S

ANTI-BILIOUS BITTERS

CURES

Dyspepsia, Nervousness,
Bilious Attacks, Sick and
Nervous Headache, Constipation of the Bowels,
Kidney and Bladder
Affections, Sour Stomach,
Chills and Fevers,
Female Diseases,
All Bilious Affections,
and is an
Excellent Stomachic.

Is a purely vegetable faultless Family Medicine, for all diseases caused by a Deranged State of the Liver. It has been manufactured at Laroque's Pharmacy, Cor. Baltimore and Harrison Sts., for more than fifty years. Its efficacy in all forms of Liver diseases has been tested and approved by thousands who have used it successfully. The price also is within the reach of all, being 25 cts. for packages, and \$1 for the liquid in bottles.

REGULATES

Torpid Liver, and cures all Diseases arising from a disordered stomach. Its use can be stopped at any time, without any bad effects. Always beneficial; never harmful. Be sure and get the genuine. Prepared at

Laroque's Pharmacy,
Cor. Baltimore and Harrison Sts., and having the signature of W. E. Thornton on the label.

W. E. THORNTON,

PROPRIETOR,

N. E. Cor. Baltimore and Harrison Sts., BALTIMORE, MD.

Sold by Druggists and Storekeepers Everywhere.



This Powder has proven to be a most reliable preparation in all the ordinary diseases of **HORSES, CATTLE, SHEEP, SWINE and POULTRY.** It will keep the animal in a complete, thrifty, healthy condition, naturally producing to its full capacity without any injury to its system.

Your Cow is sure to yield an increase of milk and butter of at least 25 per cent. Your stock will fatten on one-fourth less feed.

Especially does this Powder show its good effect on **HOGS.** It has also been found a sure cure and preventative of **CHICKEN CHOLERA** and **HOG CHOLERA.** Price 25 cents per pack of 12 ounces. 5 packs \$1.00. 1 dozen \$2.00. A pamphlet with full particulars. Address,

F. A. MILLER,

SOLE PROPRIETOR,

No. 331 ARCH STREET, PHILADELPHIA.

N. B. My sales for the past six years have averaged 765 gross per year.

POOLE & HUNT, BALTIMORE.

MANUFACTURERS OF

THE POOLE & HUNT LEFFEL TURBINE

WATER WHEELS,

**MACHINE MOULDED
MILL CEARING,**

**SHAFTING, PULLEYS AND HANGERS,
STEAM ENGINES AND BOILERS,
MIXERS FOR FERTILIZERS AND CHEMICALS.**

ORGAN BEATTY PIANO

NEWBURN'S 312 St. ... set Golden Tongue Reeds, 4 Oct's, 4 Knee Swells, Walnut Case, warranted 4 years. Stool & Bench \$30. New Pianola, Stool, Cover & Bench \$143 to \$225. Before you buy be sure to write me. Illustrated Newspaper sent Free. Address **DANL. F. BEATTY, Washington, New Jersey.**

LIGHT BRAHMAS and HOUDANS.

My **LIGHT BRAHMA** yard is headed by cock "Chief of Chestertown," [5285] purchased of J. K. Felch, mated with ten finely-marked hens and pullets.

HOUDANS.—My cockerel "Simon Pure" was sired by Grant's "Buffalo Delaware," 1st prize cockerel at Buffalo, N. Y., 1873, mated with nine hens and pullets. Eggs \$3 per 12.

MARION deK. SMITH,

mb-3t

Chestertown, Kent Co., Md.

THE POULTRY WORLD,

A Large and Beautifully-Illustrated Monthly,

Exclusively Devoted to

Poultry, its Housing, Breeding & Management

It gives the subject a thorough handling; is full of practical suggestions, descriptions of breeds, poultry buildings and fixtures, with original engravings by the most eminent artists in the United States and England. It treats of Poultry from the stand-point of Utility as well as Fancy. Its pages show how to hatch, feed and raise

CHICKENS AND FOWLS FOR PROFIT,

AND ALSO HOW TO

Surround Homes with Attractions in the Shape of Pets.

THE POULTRY WORLD was established to carry out in Journalism the great idea of Division of Labor, which is the "corner-stone of civilization." Every branch of Industry should be represented by a special publication. In this way the Germans are carrying every art and science toward the highest perfection, and in this country also special journals are multiplying. THE POULTRY WORLD is the organ of the Poultry interest, and is devoted to this alone. It is a

Complete Repository of Information

concerning the subject. Its editors are practical poultry-keepers, and its correspondents include the most eminent authorities in poultry matters.

Subscription, \$1.25 a Year,

With 75 cents additional for 12 SUPERB FOWL CHROMOS annually, sent Post-paid.

WE ALSO ISSUE THE

AMERICAN POULTRY YARD,

AN ILLUSTRATED WEEKLY,

In the Interests of Fanciers, Breeders, Farmers, Poulterers and Dealers.

Fifty-two numbers of this Weekly mailed, post-paid, for \$1.50, and each number handsomely illustrated. Though issued from the same office as the Monthly, the contents of the Weekly are entirely different from those of THE POULTRY WORLD. Or, THE POULTRY WORLD, monthly, and the POULTRY YARD, weekly, sent to same address, at the low price of \$3.00 a year for both. Or, THE POULTRY YARD, POULTRY WORLD, and 12 elegant Chromos, each representing a standard breed of Fowls, for \$2.75, all sent post-paid.

H. H. STODDARD,

Editor and Publisher, Hartford, Conn

VEGETABLE PLANTS.

EARLY AND LATE CELERY,

Early Cabbage, Tomato, Egg Plants, Pepper and Sweet Potato Plants of Choicest Varieties,
BY THE DOZEN, HUNDRED, THOUSAND OR TENS OF THOUSANDS.

Having consented to act as agent for the largest grower of VEGETABLE PLANTS on the Eastern Shore, I will take orders for Plants of any kind and guarantee them true and from the best seed in the country. All Plants will be packed in damp moss, and delivered at the wharf of the Chester River Steamboat Co., Light Street, Baltimore, without extra charge. For circulars, with full prices, &c., address

W. F. MASSEY, Towsontown, Md.

1880. PURE-BRED POULTRY. 1880.

E MONTVUE POULTRY YARDS, **E**

BROOKLANDVILLE, MD. G. O. BROWN, Proprietor.

I will spare a limited number of Eggs from my choice breeds, consisting of LIGHT BRAHMAS, HOUDANS, PLYMOUTH ROCKS, LEGHORNS, BLACK RED GAMES, P. COCHINS, SULTANS, HAMBURGS, DOMINIQUE, NARRAGANSETT TURKEYS AND BANTAMS.

My fowls have always won wherever exhibited. I send Eggs from same fowls I breed my best show-birds from. Send stamp for circulars. A few Leghorns for sale.

PERUVIAN GUANO!



The undersigned, agent for the sale of **PERUVIAN GUANO**, imported into the United States by Messrs W. R. Grace & Co., New York, agents for the consignees of the Peruvian Government, having just received per ships "Cashmere," "St. Lucie" and "Mystic Belle," a full supply direct from the best Guano deposits, containing 10 per cent. Ammonia, offers it for sale, delivered from the Government Storehouses, Waters' Wharf.

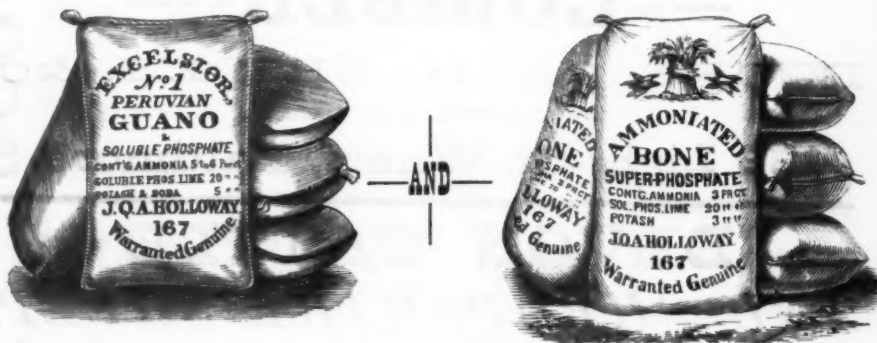
J. Q. A. HOLLOWAY, 107 McElderry's Wharf, BALTIMORE, MD.

To Tobacco Planters.

The undersigned, PIONEER in the manufacture of Fertilizers in this city, and ORIGINATOR in 1858 of the Formulas and processes of manufacture of

"Excelsior" and Ammoniated Phosphate,

So well and favorably known by the Agricultural public, relying upon his experience and personal reputation hitherto acquired in the uniform excellence of these Fertilizers, as manufactured by him, continues to offer them to the Farmers and Planters of Maryland and Virginia, with the assurance that the high standard quality of each will be maintained as heretofore.



The above are the most concentrated FERTILIZERS ever offered to the farmers and planters—combining all the stimulating qualities of Peruvian Guano, and the ever-durable fertilizing properties of Bones, in fine, dry powder, prepared expressly for drilling,—and it is the universal opinion of the farmers and planters of Maryland and Virginia, after over twenty years experience in the use of the EXCELSIOR manufactured by me, that an application of 100 pounds is equal in its effects to 200 pounds of any other Fertilizer or Guano, therefore fully 50 per cent. cheaper.

With my present advantages and superior facilities for manufacturing, I challenge competition with any Fertilizer sold in the United States, in Quality, Mechanical Condition and Price.

By strictly adhering to my Original Formulas, using only the most concentrated materials, and superintending in person their manufacture—as for the past twenty years—

Uniform Quality is Guaranteed.

Farmers, to secure the ONLY GENUINE EXCELSIOR and PHOSPHATE, prepared according to my Original Formulas established in 1858, should see that every Bag is branded as above, with the ANALYSIS and MY NAME IN RED LETTERS.

J. Q. A. HOLLOWAY,

Originator and Manufacturer,

107 McElderry's Wharf, Baltimore, Md.

—LUMBER.—

Thomas Matthews & Son,

88 N. High St. and Cor. Canton Ave. and Albemarle St., Baltimore.

WHITE PINE and **YELLOW PINE LUMBER** FOR BUILDING.

ROUGH AND DRESSED LUMBER.

HARDWOOD FOR WHEELWRIGHTS and CABINET-MAKERS. **SHINGLES,**
LATHS, PALES, ETC., at **LOWEST PRICES.** au

GEO. F. SLOAN & BRO.

—LUMBER—

DOORS, SASH, BRICKS, &c.

IN LOTS TO SUIT,

132 Light-St. Wharf, Baltimore.

DEVON CATTLE AND SHROPSHIRE SHEEP.

FOR SALE—Thoroughbred young **Devon Bulls** and young **Rams** of the Shropshire breed; several of the young bulls were sired by the IMPORTED BULL MASTER JAMES, the winner of several prizes in England; amongst others the first prize given to his class at the show of the Royal Agricultural Society of England, held at Birmingham in July, 1876. The young Rams were all sired by IMPORTED Rams, purchased at high figures, from one of the very best flocks in England, and several of them are out of Ewes recently imported from the same flock as the Rams, the others being out of Ewes obtained from the celebrated flock of Mr. T. Conner, of Waldberg, near Haverstraw, in the State of New York. The young Bulls offered for sale are by MASTER JAMES, the sire of the Grand Prize Bull LORD NEWHAM, and MASTER JAMES himself gained first prize of his class at the Birmingham show of the Royal Agricultural Society of England in 1876. Particulars as to pedigrees, prices, &c., may be obtained by applying to

WILLIAM U. KENNON,

Sabot Island P. O., Goochland County, Virginia.

JNO. S. REESE & CO.

GENERAL AGENTS

Pacific Guano Co.

No. 10 SOUTH STREET, BALTIMORE.

Branch—1326 Cary Street, Richmond.

Berkshires!

I am prepared to furnish PIGS of the best blood at the following prices, boxed and delivered to express:

SINGLE PIG, \$6.

PAIR, \$10.

TRIO, \$13.

THOS. J. LEA,

Brighton P. O., Montgomery County, Md.

BERKSHIRE PIGS FOR SALE.

On account of want of room to properly accommodate them during the winter, I offer a few animals of all ages at greatly reduced prices, if promptly applied for.

A record of thirty premlums (the true test of merit) won this season, in many hotly-contested rings, in some of which were the first prize and sweepstakes winners at the Canadian, Illinois and St. Louis shows, is sufficient (without further remark) to prove the high quality of my stock. Correspondence solicited before purchasing elsewhere. Representations and safe delivery guaranteed. I have also **Bronze Turkeys** for sale.

ALEX. M. FULFORD,

BEL AIR, MD.

THE SOUTH ILLUSTRATED.

Pronounced by the press the best book of the kind ever issued. Containing 117 Pages, 50 Fine Engravings and Letters from well-known gentlemen, North and South, showing how Northern settlers are received.

THE SOUTH FOR INVALIDS!

The South for Farmers!

**EVERY NORTHERN MAN SHOULD
READ IT CAREFULLY.**

Descriptions of Plantations for Sale.

50 VIEWS OF SOUTHERN SCENERY.

Every Southern Man should have it.

Mailed, postpaid, for four 3-cent Stamps. Address,

GEO. H. CHAPIN,

PUBLISHER.

267 Washington St., Boston, Mass.

EGGS.

Eggs for hatching of the following varieties, carefully packed and delivered to express upon receipt of prices named:

WHITE LEGHORN, 26 eggs.....\$1 50
BROWN LEGHORN, 36 eggs..... 1 50
GOLDEN SPANGLED HAMBURG, 18 eggs..... 1 00
PEKIN DUCKS, 13 eggs..... 1 50

THOS. J. LEA,

Brighton P. O.,
Montgomery Co., Md.

Feb. 20, 1880.

The only Southern Rake and Drill Factory in the Country.



These cuts represent our 20 Steel-Tooth Horse Rake, with Iron Hubs or Locust Hubs boiled in oil—dual in use—and our Positive Force-Feed Grain, Seed, and Fertilizing Drill (which can be changed to sow any quantity while Drill is in motion), with Pin or Spring Hubs—dual in use and giving satisfaction. It is many factors any others are the best. All we ask is, send for *Descriptive Circular and Price-List*, which contains letters from persons using them. All are warranted.
HAGERSTOWN AGRICULTURAL IMPLEMENT MFG. CO.
Hagerstown, Maryland.

Farm in Baltimore Co. For Sale, Or Exchange for City Property.

Containing 150 acres; about 25 to 30 acres in thriving timber, principally oak and chestnut; it is well watered and admirably adapted to a dairy or market farm; the soil is very kind and susceptible of the highest improvement; it is now principally set in grass. It is near the 15-mile stone on the York turnpike, fronting on both sides of the road, and five stations on the Northern Central R. R. can be reached at distances of 1 to 3 miles, by good county roads. This is the circle of the members of the Gunpowder Club, and is undoubtedly one of the best locations in the county. Churches, of all denominations, and schools, public and private, are convenient. The York turnpike is one of the very best, and the distance from the city permits a round-trip a day, for wagoning. Probably no healthier spot in the world can be found. It is laid off in fields of 12 to 15 acres, to most of which easy access is had to water for stock. The dwelling, which is commodious, and large barn, are of stone, with other out-houses, though old, yet can be made very comfortable at a reasonable expense; and there are several admirable sites for residences on the premises. This property could be advantageously divided into small lots and sold at a very great advance on the price asked for the whole. Lots on the road have brought as high as \$500 an acre, and the extent of the frontage on the turnpike, in the hands of an enterprising man, could be turned to excellent account, but the present owner is indisposed to take the trouble requisite to accomplish this, and would prefer selling the whole together. A gentleman with a very small income independent of the farm, could live on this place without labor, saving the rent of a city residence, by renting the fields on shares to be farmed under his control, reserving a garden and stabling, and the pasturage necessary for his stock. A small tenant's house on the premises would rent for the amount of taxes on the place. As I cannot occupy the place myself, I am willing to sell it on the most reasonable terms, or exchange it for city property in a good locality. For further particulars apply to the subscriber, at office of *American Farmer*, or 266 Linden Avenue, Baltimore. **SAM'L. SANDS.**

Eastern Shore Nurseries,

DENTON, CAROLINE CO. MD.

PRICES FOR SPRING OF 1880.

A superior lot of **Apple Trees**, winter varieties, for Maryland and Virginia, a specialty. Trees 5 to 7 feet at \$10 per 100. A large supply also of Red Astrachan and Early Harvest—the two leading early summer market varieties. **Standard Pear Trees**, very fine, 5 to 7 feet, at \$30 per 100. An immense stock of **Concord Grape Vines** at greatly reduced prices, viz: 3 years old, strong, \$3 per 500 or \$15 per 1,000; two years old, selected, \$7 per 500 or \$12.50 per 1,000; 1 year old, selected, \$5 per 500 or \$10 per 1,000. A large stock of **Osage Orange Plants** for hedging. One-year old plants selected at \$3.50 per 1,000, 1st class, or \$1.50 for 2d class. Also, **Shade and Evergreen Trees** at very low rates. Correspondence solicited. Price-Lists of all kinds of nursery stock free to applicants.

J. W. KERR, Proprietor.

COULSON'S Pure Ground Bone, STRICTLY PURE BONE MEAL.

Liberal Inducements offered Farmers and others at the Mill, Jenkins Lane, North of Greenmount Cemetery.

EDW'D L. COULSON,

Office, 100 W. Lombard St., Baltimore.

L E E S	Prepared Agricultural	L I M E
	Prepared Expressly for Each and Every Crop.	
	ONLY \$15 PER TON—16 BAGS.	
	It is a permanent improver of the soil. The second and third year's application does not require any more than the first to produce the same results, and no more required per acre than of the other manure, but larger results as per tests. Send for testimonials and see what others have done with it.	
	L. J. WARREN,	
Agent for the Manufacturer,	18 E. Falls Avenue, BALTIMORE.	
Also Lime, Hair, Brick, Cement and Plasters.		

JAMES PENTLAND, GREENMOUNT GARDENS,

(ESTABLISHED IN 1850)

Opposite the Entrance to Greenmount Cemetery, BALTIMORE.

Keeps constantly on hand a choice assortment of healthy and well-grown PLANTS. His stock of **VERBENAS, COLEUS**, and other Bedding Plants is extensive and in splendid condition. **ROSES, CAMELLIAS AND GERANIUMS** in large assortment.

We have also a fine lot of **MAGNOLIA GRANDIFLORA** crown in pots, all the **NEW COLEUS**, quite a distinct type from the older varieties, together with a **GENERAL COLLECTION OF PLANTS** that may be found in a first-class establishment.

At our store, **ON CHARLES STREET, Cor. Saratoga**, in the Young Men's Christian Association Building, a collection of Plants and Flowers may always be found. Choice Bouquets, Funeral Designs, and designs for the decoration of rooms, tables, and for everything for which flowers are used, put up in the most artistic style of the art, at short notice and at charges that will compare favorably with any in the country.



PENNSYLVANIA ROUTE,

FORMED BY THE

NORTHERN CENTRAL

AND

PENNSYLVANIA RAILROADS

ON THE

West, Northwest and Southwest,

To PITTSBURG, CINCINNATI,
LOUISVILLE, INDIANAPOLIS,
CHICAGO, ST. LOUIS,

AND ALL OTHER

PROMINENT POINTS.

BALTIMORE & POTOMAC

AND

Alexandria & Fredericksburg Railways

ON THE SOUTH TO

Washington, Richmond,

AND ALL POINTS IN THE

Atlantic and Gulf States.

THE ONLY

ALL RAIL LINE

WITH NO

OMNIBUS TRANSFER AT WASHINGTON.

NORTHERN CENTRAL

AND

PHILADELPHIA and ERIE RAILWAYS

ON THE NORTH TO

HARRISBURG, WILLIAMSPORT, ELMIRA,
WATKINS GLEN, ROCHESTER, ERIE,
BUFFALO, NIAGARA FALLS.

Baggage called for and checked at Hotels and private residences through to destination. Sleeping and Parlor Car accommodations secured.
Through tickets sold and information given at company's office.

N. E. Corner Baltimore and Calvert Streets.

At Depot N. C. Railway,

UNION DEPOT, CHARLES STREET STATION.

And PENNSYLVANIA AVENUE STATION.

FRANK THOMSON,

General Manager.

L. P. FARMER,

Gen'l Passenger Ag't,
Penna. and N. C. R. R.

Patent Selenitic Cement.

New Berne, N. C., Feb. 18, 1880.

MR. WM. WIRT CLARKE, Baltimore, Md.:

Dear Sir—I have just completed a large cistern with the Selenitic Cement, and it gives perfect satisfaction.

Yours truly,

L. H. CUTLER.

A. G. MOTT, AGRICULTURAL IMPLEMENT

And Seed Warehouse,

40 ENSOR STREET

NEAR BELAIR MARKET,

BALTIMORE, MD.

Sole Agent for the great BELLE CITY FEED CUTTER, "Boss of the World," for Fodder, Hay and Straw. Cuts 4 lengths, from $\frac{1}{2}$ to 3 inches. Will cut one ton in 30 minutes. SEND FOR CIRCULAR.

PRATT'S ASTRAL OIL

WILL NOT EXPLODE.

Wholesale and Retail.

LAMPS OF EVERY DESCRIPTION,

For Sale by W. & H. SPILCKER,

Agents for Chas. Pratt & Co.
New York.

136 Baltimore St.

JERSEY

COWS, HEIFERS,
and CALVES.

All Herd-Book Animals.

For sale by

W. H. PEROT,

25 S. Gay Street, Baltimore.

FILSTON FARM

FOR SALE—A few Herd-Registered AYRSHIRE BULL CALVES.

D. A. CONN, Manager,

Glencoe P. O., Baltimore, Md.

The Ensilage of Maize,

And OTHER GREEN FODDER CROPS

By M. AUGUSTE GOFFART.

Translated by J. B. Brown, with a history of the Art in Maryland by Francis Morris, Esq.

Illustrated by plans of Silos, &c.; a portrait of M. Goffart, &c.

Price, neatly bound in cloth, \$1.00. Sent by mail, postpaid.

American Farmer Office,

BALTIMORE, MD.

Fruit and Ornamental

Large Stock. Low Rates.

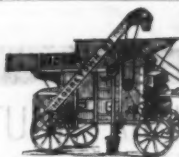
Standard Pear Trees a
Specialty.
Send Stamp for Trade List.**E. HOODY & SONS, Lockport, N. Y.**

NIAGARA NURSERIES.

TREES

AGENTS WANTED.

Established 1839.

**THE VICTOR
Double Muller
Clover Machine**Is the only kind that has ever
hulled 100 bushels of seed
in one day from damp and
wet straw. Send for Des-
criptive Circular and Price
List, which contains many
letters confirming this.Hagerstown Agricultural Implement Mfg. Co.
State where you saw Advertisement. Hagerstown, Md.**M'GINNIS HARROW.**

From Mr. J. D. Guthrie, of Shelby county, Ky., State Grange Purchasing Agent, and famous grower of Long-Wooled Sheep.

SHELBYVILLE, Ky., May 6th, 1878.

MESSRS. M'GINNIS, TAYLOR & HOLDERBY:

GENTLEMEN—In reply to your request for my opinion, I take pleasure in saying the M'Ginnis Harrow has given universal satisfaction.

It pulverizes deeply, and its smoothing capacity is equal to any Harrow I have ever tried.

It stands unrivaled for destroying the toughest sods with its knife-like teeth, perfectly reducing the sod with two harrowings, presenting a thorough seed-bed for any kind of grain or seed.

Its draft is much lighter than the ordinary Harrow.

It is equal to the Thomas Harrow in lightness of draft, while it possesses decided advantages over the Thomas in DEEP PULVERIZATION, STRENGTH and DURABILITY.

I have said thus much from observation of its working on the field.

While the Thomas Harrow is better adapted for the shallow covering necessary for very small seeds, for general purposes I think the M'Ginnis Patent is WITHOUT A RIVAL.

Yours truly,

J. D. GUTHRIE.

GILPIN'S VEGETABLE LIVER PILLS

Are prepared, with great care, from medical plants, are coated with sugar that they may be taken by the smallest child and upon the most delicate stomach: are intended especially to act upon the Liver—thereby relieving all such diseases as COSTIVENESS, HEADACHE, PARALYSIS, DYSPEPSIA, COLIC, JAUNDICE, and all diseases of a BILIOUS origin. No better evidence can be offered in favor of these Pills than the very fact that where their ingredients are known to family physicians, they are using them in their private practice. We append the following from one of our most prominent physicians:

OAKLAND, June 26, 1869.

DR. GILPIN—After carefully examining the formula of your Sugar-Coated Pills, I feel it but justice to say, that the combination is certainly perfect, and comprises the only remedies I ever believed were the proper ones to be used in diseases of a bilious origin. I shall take pleasure in recommending them not only to my patients, but the entire medical profession.

Yours truly,

J. M. WISTAR, M. D.

From one of the leading retail druggists of West Virginia:

MESSRS. CANBY, GILPIN & Co.—Gents: Please send by express twelve dozen Gilpin's Vegetable Liver Pills. I have the most flattering accounts from all who have used them, and believe the day is not far distant when they will supersede all others.

Yours,

F. M. CHALFANT.

We could fill several pages with certificates, &c., from prominent men throughout the country, but prefer to let the Pills in the future, as they have in the past, rest entirely on their own merit—knowing that wherever they are known their use will pass down from generation to generation.

GILPIN'S VEGETABLE LIVER PILLS are sold by all respectable Druggists and Country Store-keepers throughout the United States and Canada.

Principal Depot: CANBY, GILPIN & CO., Baltimore.

PRICE & HEALD,**HARDWOOD, CABINET AND BUILDING****LUMBER,****SASH, DOOR FRAMES, BLINDS, &C.**

Office and Yard, Corner Pratt and Exeter Sts.,

BRANCH YARD, BLOCK STREET,
ADJOINING DRAW BRIDGE.**BALTIMORE, MD.**



A beautiful work of 100 Pages, One Colored Flower Plate and 500 Illustrations, with Descriptions of the best Flowers and Vegetables, and how to grow them. All for a FIVE-CENT STAMP. In English or German.

VICK'S SEEDS are the best in the world. FIVE CENTS for postage will buy the FLORAL GUIDE, telling how to get them.

The Flower and Vegetable Garden, 175 Pages, Six Colored Plates, and many hundred Engravings. For 50 cents in paper covers; \$1.00 in elegant cloth. In German or English. Address,

JAMES VICK, Rochester, N. Y.



Will be mailed free to all applicants, and to customers without ordering it. It contains four colored plates, 500 engravings, about 200 pages, and full descriptions, prices and directions for planting 1500 varieties of Vegetable and Flower Seeds, Plants, Herbs, etc. Invaluable to all. Send for it. Address,

D. M. FERRY & CO., Detroit, Mich.

32 Pages, a Colored Plate in every number and many fine Engravings. Price \$1.25 a year; Five Copies for \$5.00. Specimen numbers sent for 10 cents; 3 trial copies for 25 cents. Address,

JAMES VICK, Rochester, N. Y.

VIRGINIA LANDS.

UPPER JAMES REAL ESTATE AGENCY
BY **WILLIAM HOLMAN,**
CARTERSVILLE, Va.

Who offers for sale upwards of 12,000 acres of land, lying in one of the most desirable regions of Eastern Virginia.

Catalogues sent on application.

my-11



BALTIMORE VETERINARY INFIRMARY

152 Saratoga Street,

Between Howard and Eutam, BALTIMORE, MD.

D. LEMAY, Veterinary Surgeon, Graduate of the Montreal Veterinary College, Canada, having recently established a Pharmacy and Infirmary at the above-mentioned locality, is enabled, through long experience and thorough knowledge of the science of the profession, to offer his services to the public with confidence. All calls or orders through post or telegraph for sickness in horses, cattle, &c., promptly answered. Operations successfully performed.

TERMS MODERATE.

White Leghorns.

As Layers, the WHITE LEGHORNS have few superiors, and are strictly non-Sitters. Can furnish them at \$3 per trio, boxed and delivered to railroad.

THOS. J. LEA.

Brighton P. O., Montgomery Co., Md.

IMPERIAL WINE VINEGAR. NONPAREIL CIDER VINEGAR.

Strictly pure and reliable. Many imitations, costing 3 cents a gallon, are sold as Cider Vinegar. To guard against deception observe that packages bear our brands. Fresh APOLINARIS WATER.

FREDK. M. BOLLMAN, Importer,
63 S. GAY STREET.

JOHN DUER & SONS

24 South Charles Street,
BALTIMORE, MD.

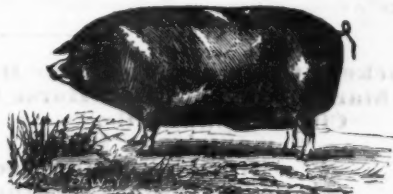


New and Beautiful Designs—Best Quality

SLATE MANTELS

AT REDUCED PRICES.

JOHN DUER & SONS.



DEVON CATTLE. SOUTHDOWN, LEICESTER AND MERINO SHEEP. POLAND-CHINA, BERKSHIRE and ESSEX HOGS A SPECIALTY.

All bred from the most noted and fashionable strains of Prize-Winning Stock.

I took first premiums in their classes on Devon Cattle, Leicester and Merino Sheep, Poland-China and Essex Hogs, at Virginia State Fair in 1875 and 1876, besides a large number of Prizes taken at Piedmont and Lynchburg Fairs.

Address,

F. W. CHILES,
Toleraville, C. & O. R. R., Va.

JOSHUA THOMAS, Steam, Agricultural and Mill Machinery

**ECLIPSE
Agricultural
ENGINE.**



Best, Cheapest,
and most
Economical Engine
in the Market.

FIRST PREMIUM WHEREVER EXHIBITED.

Buffalo Pitts Thresher and Cleaner,

The old Standard, and still ahead of all competitors.

Kirby and Wheeler Mowers and Reapers,

OSBORNE SELF-BINDING HARVESTER.

A full line of Harvesting Machines, adapted to the wants and taste of Farmers any and everywhere.

**Buckeye Grain and Fertilizer Drill,
Star, Victor, and Ilion Horse Rakes,
Circular Saw Mills,**

Portable Grist Mills,

Millstones, Smut Machines, Bolting Cloths,

Mill Picks, Leather and Gum Belting,

Cucumber-Wood Pumps,

Buckeye Force Pump,

The Watt and Ball Plows, &c., &c.

Prices and Descriptive Circulars furnished on application, and correspondence solicited from all wanting anything in my line.

OFFICE AND WAREHOUSE:

No. 53 LIGHT STREET,

BALTIMORE, MD.

BUILDERS' SUPPLIES.**Doors, Sash, Blinds, Mouldings,****STAIR WORK, BRACKETS,**

And every necessity for the complete finishing or adorning of Buildings, at

LOWEST POSSIBLE PRICE.

CALL OR ADDRESS

HUTCHENS & CURTIS,**Cor. Pratt and Commerce Sts., BALTIMORE.****D. B. FOSTER & SON,****Plumbers, Steam and Gas Fitters,****No. 39 Clay Street, BALTIMORE.**

DOUBLE AND SINGLE-ACTION FORCING PUMPS, BATH TUBS, WATER CLOSETS, COOKING RANGES, HOT-AIR FURNACES, HYDRANTS, LEAD and IRON PIPE, SHEET LEAD, &c., &c. Ranges of every description repaired and put in order. PROMPT ATTENTION TO JOBBING. COUNTRY WORK A SPECIALTY.

Established]

A. E. WARNER,

[1811.

Manufacturer of

Silver Ware & Rich Jewelry,

English, Swiss and American WATCHES of the Best Makers; Importer and Dealer in Diamonds, Fine Watches, Silver-Plated Ware, Table Cutlery, &c.

WEDDING PRESENTS,**Premiums for Agricultural Fairs, Fine Bronzes, Opera Glasses and Shell Jewelry, &c.**All of which is offered at **GREATLY REDUCED PRICES.**

je-ly

No. 135 W. Baltimore Street, near Calvert, Baltimore.**GEORGE O. STEVENS,****WINDOW SASHES, BLINDS & DOORS****49****LIGHT STREET,****BALTIMORE.****KEEP IN STOCK AND FURNISH TO ORDER:**

Window Sashes, Doors, Blinds, Mouldings, Brackets, Hand Railings, Balusters, Newel Posts, Bracket Shelves, Barge Boards, Window Caps, Door Caps, Pews and Church Work, Blind Hinges, Builders' Hardware, Wood Mantels, Window Frames, Door Frames, Paints, Oil, Putty, Glass, Lumber, Bricks, Lime, Sash Weights, Sash Cord, Porch Columns, Tree Boxes.

THE BEST WORK AT LOWEST PRICES.

J. C. VALIANT & CO.
Paper Hangings & Window Shades,
 Upholstering and Curtain Decorations,
WINDOW AWNINGS, MOSQUITO NETS, CORNICES, &c.

Orders by mail promptly attended to. Samples freely sent, and first-class workmen sent to all parts of the country.

183 MADISON AVENUE,

(Between Orchard and Biddle Streets.)

BALTIMORE, MD.

Rosebank Nurseries,

GOVANSTOWN, BALTIMORE COUNTY, MD.

**ORNAMENTAL AND FRUIT TREES, FLOWERING SHRUBS,
 AND HERBACEOUS PLANTS.**

We invite the attention of the public to our select stock of the following: **STANDARD** and **DWARF PEARS**,—2, 3 and 4 years old. **APPLES**—Standard and Dwarf. **CHERRIES**—Standard and Dwarf. **APRICOTS, CRAB APPLES, MULBERRIES, GRAPE VINES**, of the most popular kinds, together with other small fruits.

Our **COLLECTIONS** of **ORNAMENTAL** Trees and Shrubs are large, and embrace most of the rarest sorts.

ROSES on their own roots, with the newest of **BEDDING-OUT** plants by the dozen or 1,000, for which we have issued a separate Catalogue.

SPECIAL—\$6.000 one and two-year old **ORANGE** plants for hedges.

CATALOGUES FORWARDED ON APPLICATION. ORDERS BY MAIL PROMPTLY ATTENDED TO.

ALL GOODS DELIVERED IN BALTIMORE FREE OF CHARGE.

W. D. BRACKENRIDGE.

TO FARMERS AND PLANTERS.

R. J. BAKER & CO.

36 and 38 S. Charles Street,

FACTORY AT LOCUST POINT,

BALTIMORE, MD.

MANUFACTURERS AND DEALERS IN

**PURE GROUND RAWBONE, SULPHATE OF LIME, SULPHATE OF AMMONIA,
 NITRATE OF SODA, SULPHATE OF SODA, MURIATE AND
 SULPHATE OF POTASH AND GROUND PLASTER.**

All **PURE** Chemicals for mixtures, compounds of formulas for fertilizer mixtures, as low as any house for cash. Write for prices.

—WRITE TO—

A. P. OR M. B. ROWE,

CO-OPERATIVE STOCK FARM & POULTRY YARDS,

FREDERICKSBURG, VA.,

For Herd-Book Jersey or Ayrshire Cattle, bred from stock selected in person from best Northern breeders and from "Centennial" Stock Exhibition. Cotswold, Leicester, Shropshire and Southdown Sheep, all bred from best imported stock, and Lambs of each breed for sale in August. Herd-Record Berkshire Swine of best strains, and Essex surpassed by none. Poultry—Choice, well-marked young fowls from all of our varieties will be for sale this fall. Orders for eggs from all classes have closed, except Leghorns. We will continue to fill orders for Leghorn eggs, of either the brown or white variety, at \$1.50 per dozen. More premiums have been awarded to our stock at the Virginia State Fairs than that of any other exhibitor in the State. And we would refer all to the whole community in which we live and where our Senior has resided for more than half a century, and particularly to all those whom we have supplied with stock, both North and South,—as we always endeavor to make our stock our best advertisement, and guarantee satisfaction.

Entered at the post-office at Baltimore at second-class rates.

THE BEST WORK AT LOWEST PRICES.

SLINGLUFF & CO.'S

Chesapeake Chemical Works.

OFFICE, } BALTIMORE. { WORKS,
155 W. Fayette Street. } Foot of Leadenhall St.

MANUFACTURERS AND MANIPULATORS OF

PHOSPHATES

We are now offering to the Trade the following **WELL-KNOWN
BRANDS OF GOODS**, which we guarantee
fully up to Standard:

SLINGLUFF'S DISSOLVED GROUND BONE,

Containing 3 per cent. of Ammonia.

SLINGLUFF'S Dissolved South American Bone Ash

Containing 40 to 44 per cent. Soluble Bone Phosphate.

SLINGLUFF'S Dissolved South Carolina Phosphate

Containing 28 to 32 per cent. Soluble Bone Phosphate.

To meet the demand for a high-grade Fertilizer, we are offering **SLINGLUFF'S
NATIVE SUPER-PHOSPHATE**—prepared entirely from Animal Bone—highly
ammoniated.


Also, **SLINGLUFF'S No. 1 AMMONIATED SUPER-PHOSPHATE**. This
we can confidently recommend as one of the best fertilizers sold in the market at a
low price.

R. W. L. RASIN & CO.

MANUFACTURERS OF

Chemical Fertilizers

—) FOR (—

 **Cotton, Tobacco, Corn, Oats, Wheat, &c.**
Works, SOUTH BALTIMORE.

Where they have introduced the **MOST COMPLETE MACHINERY** for compound-
ing Concentrated Fertilizers, that their great experience has enabled them to so
successfully introduce to the Planters of the Middle and Southern States.

SOLUBLE SEA ISLAND GUANO

So well-known and of **UNDOUBTED EXCELLENCE.**

EMPIRE GUANO

A High-Grade Fertilizer of **KNOWN MERIT.**

Dissolved Bone Phosphate

Prepared from **GROUND ANIMAL BONES.**

ACIDULATED SOUTH CAROLINA and NAVASSA PHOSPHATES

AMMONIATED ALKALINE PHOSPHATE,

A complete manure, endorsed by the Patrons, who have used it with great satisfaction
for the last 5 years, and is on sale by Grange Agents at Baltimore,
Richmond, Norfolk, Petersburg and Alexandria.

RAW and STEAMED BONES, POTASH SALTS,

And all Fertilizing Materials in Store and for Sale.

 **SPECIAL COMPOUNDS PREPARED ON ORDERS.**

R. W. L. RASIN & CO.

S. W. Cor. SOUTH and WATER STREETS, BALTIMORE.